Report of the
Medical Exchange
Mission
to the USSR

MATERNAL AND CHILD CARE

October 12–November 11, 1960

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FOREWORD

In October 1960, six American medical scientists departed on a mission to survey maternal and child care and related research in the Soviet Union. Members of this mission, sponsored by the National Institute of Neurological Diseases and Blindness of the National Institutes of Health, Public Health Service, U.S. Department of Health, Education, and Welfare were:

Dr. Stewart H. Clifford, chief of the Newborn Service, Children's Hospital and head of infant care, Boston Lying-in Hospital, Boston, Mass., who served as chairman of the group.

Dr. Allan G. Barnes, professor and chairman of the Department of Gynecology and Obstetrics, Johns Hopkins University, and Gynecologist-Obstetrician in Chief, Johns Hopkins Hospital, Baltimore, Md.

Dr. Katherine Bain, deputy chief, Children's Bureau, Social Security Administration, Department of Health, Education, and Welfare.

Dr. Bernard Greenberg, professor of biostatistics and head of department, School of Public Health, University of North Carolina, Chapel Hill, N.C.

Dr. Edith L. Potter, professor of pathology, Department of Obstetrics and Gynecology, University of Chicago, Chicago, Ill.

Dr. Fred S. Rosen, research fellow in medicine, Children's Hospital, Boston, Mass., and research fellow in pediatrics, Harvard Medical School.

The report of this grant-supported mission forms another important bridge in our understanding of the Soviet Union. Since the health of mothers and children is important to all countries, the U.S. mission was given a particularly cordial reception. Throughout its visit, the American team was impressed with group attitudes which reflected a desire to listen, to see, and to learn.

Members of this mission shared responsibility for reporting their observations. This report, which was edited for publication by the National Institute of Neurological Diseases and Blindness, preserves the authors' own records and reactions as presented in their original account.

The United States sent to Russia a highly competent group whose scientific training qualified them to make unbiased observations. Their report describes, clearly and objectively, services and research activities relating to maternity, infancy, and early childhood in the Soviet Union. It should be of great interest to all workers in maternal and child health both in the United States and other English-speaking countries.

We in this country would welcome a similar group from the U.S.S.R. to observe our activities in maternal and child care—our research methods, our preventive services, and our medical programs. Although the patterns of providing care in the two countries differ greatly, there exists a common ground of basic knowledge that can be shared.

RICHARD L. MASLAND, M.D., *Director*,
National Institute of
Neurological Diseases and Blindness.

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INTRODUCTION

United States–Union of Soviet Socialist Republics, Medical Exchange Missions, 1956–60

Early in 1956, the Public Health Service of the U.S. Department of Health, Education, and Welfare, in cooperation with the Department of State, organized an exchange program in medicine between the United States and the Soviet Union.

The objectives of the program were, through missions and group visits, to open the way for more active relations between medical and public health leaders in both countries, and to facilitate the exchange of technical information in the health fields.

The first Russian mission, on poliomyelitis, arrived in the United States in mid-January 1956, for a 5-week stay. The U.S. reciprocal mission on microbiology and epidemiology visited the Soviet Union in February and March of 1956.

A second U.S. mission, to study prevailing public health problems and practices at close range, left the United States on August 13, 1957, for a 4-week visit to the Soviet Union, returning on September 14.

The Soviet reciprocal mission in turn visited the United States in October and November 1957.

In January 1958, the United States and the Soviet Union agreed to exchange missions in eight specific fields of medical science. Under this agreement, a delegation of six American scientists, in November of that year, observed Soviet research activities in the physiology and pharmacology of the nervous system. Their visit, reported in Public Health Service Publication No. 800, was sponsored by the National Institute of Neurological Diseases and Blindness. In February 1959, under the same exchange agreement, three Soviet scientists visited research centers in the United States to make a similar survey.

Exchanges Under the Zhukov-Thompson Agreement of November 21, 1959, 1960–61

Under the Zhukov-Thompson Agreement[1] of November 21, 1959, the United States and the Soviet Union agreed to provide for specific exchange missions during 1960 and 1961. The hope was that these exchanges would contribute significantly to the betterment of relations between the two countries, thereby contributing to a lessening of international tension.

One of the areas agreed upon was the study of maternal and child care and related research in the U.S.S.R. and a study of industrial medicine and hygiene in the United States of America by a Soviet delegation.

On June 14, 1960, Dr. H. von Zile Hyde, assistant to the Surgeon General for International Health, proposed to Dr. Valerie N. Butrov, member of the Collegium and chief, Department of External Relations, Ministry of Health of the U.S.S.R., the sending of a U.S. delegation to study maternal and child care and related research in the U.S.S.R. during the period of October 12 to November 11, 1960.

Members of the proposed delegation were:

1. Dr. Stewart H. Clifford, Chairman (Pediatrics),
   Boston Lying-In Hospital,
   221 Longwood Avenue,
   Boston 15, Mass.
2. Dr. Katherine Bain (Pediatrics and Public Health),
   Deputy Chief, Children's Bureau,
   Department of Health, Education,
   and Welfare,
   Washington 25, D.C.

[1] This agreement resulted from negotiations conducted in Moscow between delegations headed on the United States side by Llewellyn E. Thompson, Ambassador Extraordinary and Plenipotentiary of the United States of America to the Union of Soviet Socialist Republics, and on the Soviet side by O. A. Zhukov, Chairman of the State Committee for Cultural Relations with Foreign Countries under the Council of Ministers of the U.S.S.R.

3. Dr. Allan C. Barnes (Obstetrics and Gynecology),
Professor and Chairman of the Department of Gynecology and Obstetrics,
Gynecologist-Obstetrician in Chief,
Johns Hopkins Hospital,
Baltimore 5, Md.

4. Dr. Berhard G. Greenberg (Biostatistics),
School of Public Health,
University of North Carolina,
Chapel Hill, N.C.

5. Dr. Edith L. Potter (Pathology),
Professor of Pathology,
Department of Obstetrics and Gynecology,
University of Chicago,
5841 Maryland Avenue,
Chicago 37, Ill.

6. Dr. Fred S. Rosen (Pediatrics),
Children's Hospital,
300 Longwood Avenue,
Boston 15, Mass.

The delegation expressed its wishes to become acquainted with the following general fields of scientific endeavor in the U.S.S.R. and to have the opportunity to exchange viewpoints with scientific colleagues in the Soviet Union:

(1) *Methods of collection and analysis of health data and statistics.* The delegation would like to observe a center where such data are analyzed, and to confer with any individuals who are concerned with cooperative or collaborative operations and with the collation of data derived from varied sources. It would be anxious to see a computer center applicable to such purposes. The delegation wishes to emphasize that it is not interested in data per se, but is concerned with methods of analysis.

(2) *The broad programs of maternal care.* The delegation would like to learn about the methods of indoctrination and preparation for pregnancy. It would like to have the privilege actually to observe the course of events of a woman in labor and through the period of delivery. It would like to see the conduct of labor in a large maternity hospital. In addition, it would like to observe the procedure as conducted by a midwife, or in one of the smaller hospitals in a rural area.

(3) *The technique of newborn care* and the management of such special problems as prematurity, kernicterus, and infection of the newborn.

(4) *The pathology of pregnancy and infancy.* The delegation would like to observe an autopsy on fetus or child conducted in a maternity or pediatric hospital.

(5) Child care programs up to approximately the age of 6 (preschool). The delegation would be interested in becoming acquainted with the immunization and well baby programs, nursery care (creche), and programs for the detection of the neurologically damaged child, the evaluation of the defects of such children, and special training programs for the care of the handicapped.

On August 3, 1960, Dr. Butrov wrote stating that the Ministry agreed to admit the Mother and Child Care Delegation for the period requested.

Members of the U.S. Delegation on Maternal and Child Care and Related Research in the U.S.S.R. and representatives of the Ministry of Health, U.S.S.R. Left to right are Dr. Allan C. Barnes, Johns Hopkins University Medical School; Dr. Fred S. Rosen, Harvard Medical School; Juliet R. Shakhbagova, Interpreter; Dr. Bernard Greenberg, University of North Carolina; Dr. Lydia Grechishnikova, Ministry of Health, U.S.S.R.; Dr. Edith L. Potter, University of Chicago, Dr. Katherine Bain, Children's Bureau, Department of Health, Education, and Welfare; and Dr. Stewart H. Clifford, chairman of the Delegation, Harvard Medical School.

Itinerary

1960

October 12—Departed New York, N.Y., 21:30.

October 13—Arrived Brussels 8:30.
—Departed Brussels 10:30.
—Arrived Copenhagen 14:30.

October 14—Departed Copenhagen 16:00.

October 15—Arrived Moscow 0:30—Ministry of Health, U.S.S.R.

October 16—Sunday.

October 17—N. A. Semashko Institute of Public Health for the Organization and History of Medicine of the Ministry of Public Health of the U.S.S.R.
—Central Research Institute of Obstetrics and Gynecology of the Ministry of Health R.F.S.S.R.

October 18—Maternity Home No. 25, Moscow City Health Department.
—Children's Polyclinic No. 32, Moscow City Department of Health.

October 19—Rusakov Specialized Children's Hospital, Moscow City Department of Health.
—Institute of Pediatrics of the Academy of Medical Science.

October 20—Central Research Institute of Obstetrics and Gynecology of the Ministry of Health R.F.S.S.R.
—Ministry of Health, U.S.S.R., Statistical Department.

October 21—Institute of Nutrition of the Academy of Medical Sciences of the U.S.S.R.
—Departed Moscow 23:50.

October 22—Arrived Leningrad 8:55.
—Institute of Pediatrics of the Academy of Medical Sciences, U.S.S.R.

October 23—Sunday.

October 24—Institute of Obstetrics and Gynecology of the Academy of Medical Sciences, U.S.S.R.
—House of Sanitary Information.

October 25—Turner Scientific Research Institute of Children's Orthopedics.
—Children's Hospital of the Smolny Rayon.

October 26—Departed Leningrad 11:30.
—Arrived Kiev 15:00.

October 27—Ministry of Health, U.K.S.S.R.
—Institute of Infectious Disease of the Academy of Medical Sciences, U.S.S.R.

October 28—Institute of Maternal and Child Welfare, Third City Specialized Children's Hospital.
—Second City District Maternity Home, Rayon 10.
—First Children's Polyclinic of the Shevshchenko District.

October 29—Makarov Village Hospital.
—Collective Farm Maternity Home of the Village of Kopikov.
—House of Culture.

October 30—Sunday.

October 31—Kindergarten of the Lenin Arsenal Plant.
—Crèche of the Perchersky Rayon.
—A. A. Bogomolyets Kiev Medical Institute of the Order of the Workers' Red Banner; Department of Inpatient Pediatrics of the Pediatric Faculty; United Hospital of the October Rayon and Polyclinic of Kiev.

November 1—Depart Kiev 10:00.
—Arrive Tbilisi, Georgia 14:30.

November 2—Institute of Obstetrics and Gynecology.

November 3—Research Institute for the Physiology and Pathology of Women.
—House of International Relations.

November 4—First Children's Hospital of the City of Tbilisi.

November 5—Departed Tbilisi 18:00.
—Arrived Moscow 20:30.

November 6—Sunday.

November 7—October Revolution Holiday.
November 8—October Revolution Holiday.
November 9—Institute of Defectology of the Academy of Pedagogic Science of the R.F.S.S.R.
November 10—Central Research Institute of Health Education, Ministry of Public Health, U.S.S.R.
—Ministry of Health.
November 11—Depart Moscow 10:50.

Chapter 1

Soviet Health and Medical Services for Mother and Child

Organization and Philosophy of Health Program

The health program of the U.S.S.R. is based on the philosophy that the state is responsible for the health of its people and that health care is the right of every citizen. Preventive and curative medicine, according to this philosophy, must be available without charge to everyone.

In the years since the Revolution, services have been widely spread to provide such universal coverage, made possible by the large number of physicians in the Soviet—18 per 10,000 population.

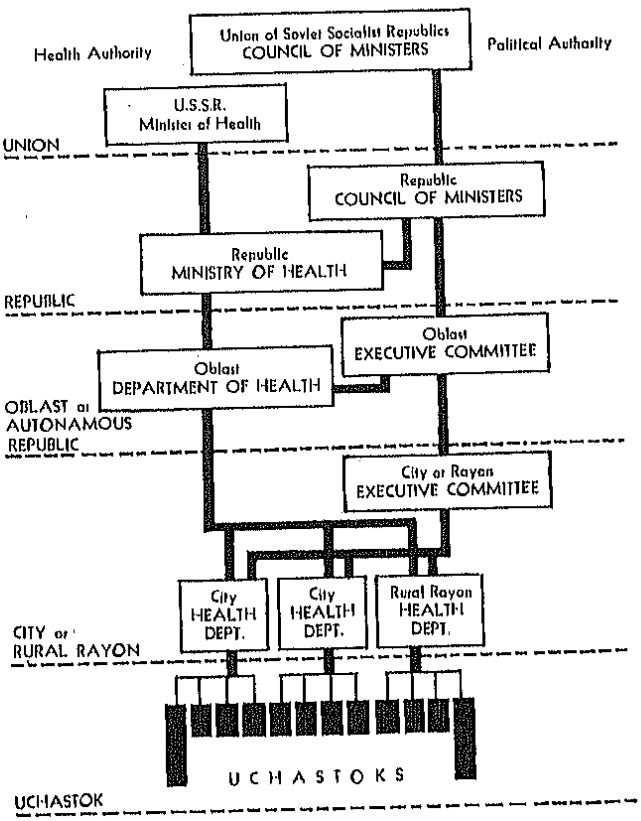
Characteristic of benefits provided is the integration of prophylactic and curative services. In the dispensaries throughout Russia, there is emphasis on periodic checkups as well as on attention to illness.

Although medicine belongs to the state, the people take a great interest in promoting it. Each community has a health committee, and each hospital has a committee of persons in the area who act to further improvement in service. Health education is under the Ministry of Health, but it is promoted through a Central Research Institute for Health Education at the national level and a corresponding unit, the House of Sanitation Information at each lower level. The strong emphasis on prevention in all health and medical programs therefore is reinforced through a well-developed mechanism for making the people health conscious and for giving them health information.

For detailed description of the organization and characteristics of the total health program, see the report prepared by the U.S. Public Health Mission to the U.S.S.R. in 1957 (Public Health Service Publication No. 649). The organization is shown in the following chart taken from that publication.

PUBLIC HEALTH ORGANIZATION

WITHIN THE SOVIET ADMINISTRATIVE STRUCTURE, 1957



Structure of Maternal and Child Care Services

Maternal and child health has a prominent place in the health program of the U.S.S.R. High infant and maternal mortality rates at the time of the Revolution brought about an effort to "elaborate questions and to carry out urgent measures for the protection and security of motherhood as a social function of women and for the protection of children as a direct responsibility of the state." [1] Decrees were promulgated to eliminate child labor and to carry out measures to reduce maternal and infant mortality. Although mortality rates have dropped sharply in the U.S.S.R. in the years since the Revolution, services for mothers and children have continued to receive priority.

[1] Basic Principles of Maternal and Child Health Services in the U.S.S.R. H. S. Yegorova.

Services at the National Level

At the national level, these services are directed by the deputy chief of the Department of Specialized Medical Care in the Ministry of Health. Under the deputy chief are a chief obstetrician and a chief pediatrician who have supporting staffs. Total structure of the program—including content, standards for services, personnel required—is determined at this top level, but administration is decentralized.

Dr. Nina S. Yegorova, deputy head of the Department for Specialized Medical Services, Ministry of Public Health, U.S.S.R.

Services at the Republic Level

Each of the 15 Union Republic Ministries of Health has a structure similar to that at the national level, with a high-ranking official in charge of maternal and child health. In the framework set down by the Union Ministry, the Republic Ministry develops and carries out its program. This includes supervision of women's and children's consultation centers, health services in crèches (day nurseries), kindergartens, schools, and all other institutions for children. A similar, though somewhat simpler, structure is maintained at the district (oblast) level—both in urban and rural areas.

Services at the Urban District Level

At this local level, health services are provided mothers and children in the following ways:

Women's Consultation Centers.—These centers are widely distributed and serve the population of a definite district having between 3,000 and 4,000 women. Women are expected to attend their district's consultation center during pregnancy, after delivery, and for general gynecologic care. Other special services are also available at the centers. "Mother's Schools" teach the hygiene of pregnancy and the care of the newborn infant. During the last month of the expectant mother's pregnancy, the pediatrician and the nurse who will care for the infant later visit the mother at home to become acquainted with conditions there.

Maternity Hospitals.—In general, the expectant mother is expected to go to the one in her district for delivery, although cases with complications may be sent to special hospitals or institutes.

Children's Consultation Centers.—Each serves a district, with one physician-pediatrician assigned to a subdistrict (uchastok) of between 800 and 1,000 children. There are three nurses to every two physicians.

Originally children under three were served in separate children's consultation centers and children 3–15 in polyclinics. Now most of these have been combined, though in a few cities, because of local conditions, children's consultations still exist separately. The plan for the future calls for reorganization into united children's polyclinics.

The discharge of a newborn baby from the maternity hospital is reported to the children's consultation center or polyclinic serving his residential district. Within 3 days, a physician and nurse begin making home visits, which continue during the neonatal period until the mother is able to bring the child to the center. Here he is given regular health supervision until adolescence.

With a caseload of between 800 and 1,000 children, the physician-pediatrician "becomes in fact a family doctor, a friend of the family and, together with the district nurse who is his regular assistant, has the possibility not only of being well aware of the state of health of the children under his observation but also of influencing the living conditions of the family, which is very important for the integrated implementation of measures aimed at the children's health rehabilitation." [2]

Records picked up at random confirmed the statement that infants and young children regularly attend the consultation centers. In the Ukraine in 1959 it is reported that 90 percent of the newborns were visited by physicians at home

[2] H. Yegorova. *Ibid.*

during the first 3 days following discharge from the hospital and that 93.3 percent of the children were under systematic medical observation during the first month of their lives.

Children's Hospitals and Polyclinics.—These are often combined and may also include a children's consultation center. As a rule, children go to their district children's hospital but may be sent to another institution specializing in a particular condition.

Home Medical Care.—When a pregnant woman is ill, or for any illness of a child, a physician may be called to make a home visit. He may either refer the patient to a hospital or continue to care for the patient at home. Home nursing service is provided if the child remains at home but needs more care than the mother can give. Medicines must be purchased on prescription but are reported to be inexpensive.

Ambulance Service.—When a pregnant woman goes into labor, she telephones for an ambulance (with a midwife) that takes her to her assigned hospital. A similar service is also available for conveying ill children to the hospital.

Auxiliary Services.—Milk kitchens are provided at children's consultation centers to provide milk preparations for those babies whose mothers are unable to nurse them. Both milk and supplementary foods for infants up to 1 year of age may be provided free if necessary. Breast milk also is collected and distributed.

Health services for crèches, kindergartens, schools, and other institutions for children are provided by school doctors and nurses on the staff of children's consultation centers. At a crèche or kindergarten, for example, a doctor is assigned for the morning hours and another for the afternoon.

Children's sanatoria and other institutions for the care of special conditions are provided as part of the comprehensive system in the U.S.S.R. Because of lack of time, however, few of these were visited by the U.S. delegation whose focus was on the young child.

Services at the Rural District Level

Hospital service and public health are no longer separate entities at the rural district level. The director of the district hospital also is in charge of the public health program. The general hospital, which includes both obstetric and pediatric beds, has a woman's consultation center, a children's center, a milk kitchen, a sanitary-epidemic station, and an ambulance service.

At various points surrounding the hospital are maternity homes, which have two-to-four beds, a simple outpatient clinic for mothers, and one for children. These homes are manned by a feldscher and a midwife, but a telephone is available and help, if needed, can be obtained quickly from the district hospital.

The maternity home visited by the mission was a simple one that had electricity but was without running water. Though births there are rated as hospital deliveries, they are more similar to a competent home delivery.

Health Education in Maternal and Child Welfare

Great emphasis is placed on educating mothers on matters concerning their own health and that of their children.

Special schools for the mother are conducted at the consultation centers, and hours are adjusted to fit into her working schedule. If for some reason a woman cannot attend these classes, she may study at home through a correspondence course.

In rural areas, wide use is made of midwives to instruct all members of the family, including the husband.

During the 8-to-9 day stay in the maternity hospital, the woman is given further instruction in hygiene and in child care and feeding. Booklets and visual aids are used generously.

Early visits of the pediatrician to the home are considered of great importance from the standpoint of health education, as this establishes contact and reaches the mother at a crucial time.

The mother's instruction is later continued in children's consultation centers through lectures and special demonstrations of the use of clothing, dishes, toys, and food for various ages. Mothers are taught how to massage and to conduct gymnastics and are shown measures reported to make the child resistant to certain illnesses. The nurse, doctor, or midwife who is giving instruction is provided with appropriate literature prepared by the Central Research Institute for Health Education or the local House of Sanitary Information.

Social Measures Protect Health of Women and Children

In addition to direct medical service, the Russians site many social measures to protect or improve the health of women and children.[3]

Pregnant and nursing women, in particular, are said to have special protection. A pregnant woman may not be employed overtime beginning with the fourth month of pregnancy. A nursing mother is allowed a break every 3-to-4 hours during the day to nurse her baby. She is not permitted to work at night.

All pregnant women get leave with full pay 56 days before confinement and 56 days afterwards, which may be extended to 70 days if she has twins or there are complications. Pregnant women may not be dismissed from their jobs, but if the work is too hard they must be transferred to lighter work with the same pay.

Women who bear many children have the title "Mother Heroine," and if they have as many as three or more children, they receive a bonus. Grants are made to unmarried mothers on the theory that one source of income is not sufficient. (Most families have two sources of income, or at least the possibility of two if they wish.)

Although a high birth rate is desired, abortions became legal in 1955 to cut down on the morbidity and mortality accompanying illegal abortions. A woman seeking an abortion is subjected to considerable persuasion to carry the child to term but is permitted to have the abortion if she continues to insist. Unless the abortion is for medical reasons, the cost to the patient is 50 rubles (1960 rate $5). Contraceptive information is widely available, and contraception is promoted as a preventive of abortion.

Supervision and Control

The major function of the Central Ministry of Health is to determine the health program, set the standards, and supervise the services. Although operation is decentralized, it must be carried out in the general framework laid down from above.

For example, research now is being conducted on the possible harmful effect of heavy exercise in early pregnancy. Should these experiments prove positive, regulations to take pregnant women off heavy work early—as well as late—in pregnancy would be promulgated.

Schedules of activities suitable for each age in infancy and childhood are developed through this research mechanism and are put into effect in nurseries. Food supplements in infancy, time of immunization, and details of psychoprophylaxis are determined in this way. Thus, though administrative control is local, some degree of uniformity in service is obtained.

Structure of Sanitary and Epidemiological Service

The Soviet's Sanitary and Epidemiological Service is what its name implies—a service for control of communicable disease. At the national level, in the Ministry of Health, it is parallel to the Department of Specialized Care, which controls maternal and child health. The Sanitary and Epidemiological Service has a line down through the levels of government to the local sanitary-epidemiologic station, which is responsible for sanitation, immunization, morbidity statistics, and health education. All infectious diseases are reported by physicians to this station, which is charged with the duty of instituting all epidemiologic preventive measures. Periodically the station reports the total number of cases to higher levels, and the report eventually reaches the Ministry of Health.

Medical Resources in the Soviet Union

Personnel.—In 1960, there were 381,000 physicians in the Soviet Union who were graduates of the 6-year medical training program. Of these—

- 55,000 were physician-pediatricians;
- 27,000 were obstetricians-gynecologists;
- 92,000 were internists;
- 38,000 were surgeons;
- 10,000 were neurologists;
- 16,000 were tuberculosis physicians.

In addition, there were 300,000 feldschers with 4 years of training, 200,000 midwives with 3 years of training, and 800,000 nurses with from 3-to-4 years of training.

Facilities.—The number of hospital beds in the Soviet Union in 1959 set aside for the exclusive use of mothers and children totaled 520,900. Of these, 167,900 were maternity beds; 83,000, gynecological beds; 30,000 maternity home beds on collective farms, and 240,000 children's beds. In

[3] Although it is stated that women may not be employed in especially hard or harmful work, the mission saw many females engaged in construction, snow shoveling, and other such heavy activities.

addition, there were 119,400 children's beds in sanatoria.

Nursery places[4] totaled 1,207,000 in 1959—slightly less than 1 place per 10 children ranging in age to 3 years old.

Kindergarten places[5] in the same year totaled 2,671,000—slightly more than 1.4 places for every 10 children from 3 to 7 years old.

Children and adolescents in summer camps in 1959 numbered 5.5 million—approximately 1 percent of children 10 to 19 years old.

Budget.—In 1959, the U.S.S.R. spent 45 billion rubles for medical services and research. The Ukraine, second largest Republic, accounted for 8.2 billion rubles of this amount.

[4] In addition to these permanent nurseries, many collective farms have seasonal nurseries that take care of thousands of children.

[5] Nurseries are to be expanded by 30 percent and kindergartens by 50 percent, the mission was told.

Chapter 2

Obstetric Care in the Soviet Union

Medical care of the pregnant and parturient women in the Soviet Union is marked by a uniformity of approach and attitude. This uniformity is perhaps best epitomized in the medical records,[1] which are the same in all sections of the U.S.S.R. Another example of uniformity is the therapeutic program for eclamptogenic toxemias, which is standardized by directive and is the same in small rural communities as it is in Moscow.

This standardization of the record tends to promote—but does not necessarily guarantee—a standardization of observation of patient management.

Although absolute uniformity is undoubtedly the objective, it cannot be achieved in all details since the size of the community often determines the type of facility available. For women attending the prenatal clinic of an obstetric and gynecologic hospital in Moscow, the Rh determination would be routinely obtained. In small towns and "maternity points" [2] however, it would be obtained only if there were a history of previous trouble suggesting Rh incompatibility. This same difference exists in the consistency with which a cervical Papanicolaou cell spread is taken. These are exceptions, however, which do not vitiate the general impression of consistency and uniformity. The present discussion will concern itself with the broad outline of medical care—prenatal, intrapartum and postpartum—mentioning exceptions only where they are noteworthy.

Registration.—Early obstetrics registration is stressed and is a recurrent topic in the health propaganda. Because the pregnant woman receives a paid vacation of 112 days, there is an incentive for her to register the pregnancy early in order for her to be certified for this absence from work. This would appear to be reasonably successful in the urban centers to the extent that most of the registrations take place prior to the third missed menstrual period. In the smaller communities, however, registration of new obstetric patients is admittedly later. The highly parous woman on the collective farm was cited as an example of a patient who often needed to be reminded by her local midwife before she would register for prenatal care. The national statistic cited was that 79 percent of all pregnant women were receiving regular medical attention by the end of the third month.

Initial Visit.—The initial obstetric visit includes a complete physical examination as well as clinical measurement of the pelvis. In general, this is carried out by the obstetrician-gynecologist, although in one of the larger hospitals visited it was apparently done by an internist. Blood studies obtained include a hemoglobin and serologic test for syphilis, and more complete blood studies may be carried out in some of the larger obstetric and gynecologic hospitals. The varying situation with respect to the Rh determination and Papanicolaou has been mentioned previously. A chest X-ray, however, was obtained more routinely.

Hygiene of Pregnancy.—Both from the educational pamphlets given patients and from discussions with our Russian colleagues, it was evident that the general rules of hygiene during pregnancy are much the same for women in the U.S.S.R. as they are for women in this country. The prescriptions for rest and physical activity seem to be analogous, although there is perhaps a little more stress on sleeping in cold air. The working mother continues to work through the 32d week, although if she has a particularly fatiguing or difficult occupation, an effort is made to transfer her job in the factory to some more suitable work. After the 32d week of pregnancy, the "obstetric leave" of 112 days begins.

[1] For the Obstetric Record form, see Appendix.

[2] Akusherskiy Punkt—the small (two-to-four bed) delivery home on collective farms or in very small communities which have no other immediate facility for hospitalization.

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Diet of Pregnancy.—In general terms, the dietary instructions are not unlike those given in the United States. They call for a low carbohydrate diet rich in meats, vegetables, and fresh fruits. The official specific diet of pregnancy calls for a minimum of 2 grams of protein per kilo per day. This would seem high by the customary American standards.

In the event a pregnant woman has difficulty—economic or otherwise—in obtaining proper foods, the problem is usually placed before her own or her husband's union. The union is the agency for supplying the necessary additional foods through an appropriate fund. Aside from certifying the need, neither the State nor the medical profession, as a rule, is involved.

Prenatal Visits.—In general, prenatal visits are made at monthly intervals for the first 7 months, every 2 weeks during the eighth month, and every week during the ninth month. Although the attendant at these prenatal visits is usually an obstetrician-gynecologist, the patient is fully aware that there is no continuity of care which would provide the same obstetrician in attendance at the time she goes into labor.

Observations made during prenatal visits concern the patient's weight, blood pressure, and the determination of urinary protein. Sugar in the urine is not determined in all circumstances. Height of the fundus is measured as is the patient's girth taken at umbilicus. She is checked for evidences of edema. An interval history is obtained, and any additional complaints are investigated as indicated.

Should complications develop during the prenatal course, there is an impressively liberal use of hospitalization and consultation. Most of the obstetric and gynecologic hospitals have a pathology service for housing patients with medical complications coincident to pregnancy, and hospitalization is prescribed freely in such cases.

Psychoprophylaxis.—Psychoprophylaxis[3] is the approved approach to the relief of pain during labor, and an effort is made to instruct all pregnant women in the principles and practices of this technique. In addition to the prenatal visits previously described, six additional classes in this technique are required. These classes are sometimes conducted by midwives, but more often by obstetricians, and include the psychoprophylactic approach to childbirth.

Such a program of classes fundamentally represents a commendable effort at patient education. In addition, each woman is instructed to practice at home the necessary procedures and exercises of the psychoprophylactic technique.

The teachings differ from those of Grantly Dick Read. For example, the Soviet program does not count on the presence and cooperative assistance of the husband. In fact, the husband is excluded, and the basis of the teaching is that the woman "can achieve this herself."

The woman is to achieve an unmedicated delivery principally by the application of Pavlov's various principles. The conditioned reflex is utilized, and an effort made to condition the patient so that with the onset of the uterine contractions she will by automatic reflex relax her voluntary muscles, breathe appropriately and abandon tension. Painful stimuli are avoided. The enema is omitted unless absolutely necessary, and vaginal examinations to determine the progress of labor are substituted for the more uncomfortable rectal examination.

In addition, the Pavlovian principle of distraction is employed. An uncomfortable sensation on which one is concentrating hurts more than the same stimulus when there is some degree of distraction of attention. A series of massaging exercises are outlined which are practiced by the patient to provide distracting stimuli.[4]

This program is officially approved, and an effort made to get all pregnant women to attend these classes in preparation for childbirth. The delegation was told that 86 percent of the women in Russia participate. Of those who have had the classes, we were told in various institutions that the failure rate (defining a "failure" as a patient who required medication to achieve relief of pain) was 8, 10, or 14 percent. The delegation had the opportunity on several occasions to observe women in labor and delivery and found that they neither

[3] Within the past few years there have been an increasing number of publications in English detailing the psychoprophylactic technique. For those interested in a more complete description, reference is made to:

Childbirth Without Pain. Pierre Vellay. E. P. Dutton & Co., New York, 1960.

Psychoprophylactic Preparation for Painless Childbirth. Isidore Honstein. Grune & Stratton, Inc., 1958.

Painless Childbirth. Psychoprophylactic Method. Fernand Lamaze. Burke Publishing Co., Ltd., London, 1958.

[4] The delegation brought back descriptive material on the psychoprophylactic method of pain relief in labor, as indicated in Appendix. In addition, a 16-mm. color motion picture film in sound (Russian) was purchased and can be obtained on loan by writing: NINDB, Perinatal Research Branch, Information Officer, Bethesda 14, Maryland.

receive medication nor moaned and groaned with outward evidences of discomfort.

Additional Instructions.—In addition to the classes on psychoprophylaxis, Mother's Classes (usually six in number) are held during the prenatal period, and in some institutions programs of specialized exercises are carried out. Attendance at these classes, however, is not compulsory.

Mother's Classes largely revolve around such topics as early child care, the encouragement of breast feeding, and home preparations for the baby. Correspondence courses are available for those who are unable to attend formal classes. Exercise was most emphasized in Leningrad where a broad program of calisthenics and body-building is encouraged. With the emphasis on breast feeding that exists in the Soviet Union, breast care in the latter half of pregnancy is stressed. In the Second City (Podolsky) District Maternity Home in Kiev, for example, all women are put on the breast pump at 35 weeks for the stimulation of colostrum. Thereafter, the primigravida has 15 to 20 such treatments, and the multigravida has 10. If the woman has flat nipples, the treatment starts earlier in pregnancy.

Labor and Delivery.—Because of the comparative shortage of private automobiles, an extensive ambulance service is maintained throughout Russia. In the face of a complication of late pregnancy or in the event of the onset of labor, the patient dials the number for the ambulance dispatcher (i.e. Moscow 0303). A midwife on the ambulance is prepared to establish the reality of the diagnosis of labor and to accompany the patient to the hospital.

In Moscow at the present time a specialized hospital is employed for those patients who go into labor prematurely. This hospital (Maternity Unit 13) has a special staff and is prepared to receive patients who threaten to deliver prematurely in addition to those with anticipated Rh incompatibility problems.[5] This system, which has obvious advantages in the care of the premature or erythroblastic child, is being tested with a view to recommending it for national adoption.

In hospitals, normal labor and delivery are conducted by midwives. An obstetrician is constantly available for consultation, although the indications for such consultation vary in different hospitals. In the "maternity point" on a collective farm, greater latitude is accorded the midwife than in the large maternity hospitals, particularly teaching hospitals. In some hospitals the midwife may apply forceps and perform episiotomies (all midwives are trained in these procedures). In the larger urban hospitals, however, she is more sharply restricted, and her services are limited to manual protection of the perineum.

Rubber gloves are donned for the vaginal examinations which monitor the course of labor. In one delivery observed, however, the midwife was scrubbed but did not put on rubber gloves.

The monitoring of fetal welfare is almost entirely through auscultation of fetal heart tones. The midwife uses a straight wooden tube with trumpet-like ends, the larger one to be applied to the maternal abdomen and the smaller one to the listener's ear.

The labor rooms are communal and usually have from two to six beds each. In general, one midwife is in attendance for every two patients in labor. Rooms observed were ordinary hospital rooms, and the labor beds were regular hospital beds, except in most instances they were cut low so that the patient was not more than 24 inches off the floor.

Delivery rooms, also communal, had from two-to-five delivery tables in each. These had somewhat wider beds with pipe-type legs and without having available adjustments for Trendelenberg, and other procedures. The perineum was prepared and scrubbed in the conventional fashion but draping was relatively minimal.

In all of the hospitals visited, there were a duplicate set of labor and delivery rooms. These are used alternately: one set of labor and delivery rooms for 10 days to 2 weeks, and then the other set for the next 10 days to 2 weeks. In some hospitals the unused rooms were scrubbed down with disinfectant; in others, simply the shutting off for this period of time is held to be sufficient to achieve bacterial cleanliness.

In general, the delivery rooms were tiled and were adequately equipped with instruments. Forceps are not used with any great degree of frequency (the national figure for their use is said to be below 2 percent). On the other hand, the vacuum suction cup is used more frequently than it is in this country. The delegation was told that the incidence of its use was probably between 5 and 10 percent.

[5] The mission tried unsuccessfully to visit this facility.

An obstetrician-gynecologist is on call at all times. He is called immediately for intrapartum complications, such as bleeding or a drop in fetal heart rate. He also makes routine rounds at 2-to-3 hour intervals to evaluate any arrest in the progress of labor. In the event of a laceration (or in some instances, perineal incision) he is not routinely called, but repairs the patient on his next "rounds." Thus, the repair of such lacerations or incisions is usually 1 to 2 hours after the delivery itself has been completed.

Obstetricians work on a "duty roster" for such night calls. In common with the majority of the profession, their workweek is 36 to 40 hours. The average frequency of such night duty, in most circumstances, is 1 out of 5 or 6 nights, compensated by having the succeeding day off.

Postpartum Period.—The puerperal woman is transferred from the delivery room immediately after repair, but usually stays on the delivery floor itself 3 days. Oxytocic medication is given not routinely but on indication. The mother is encouraged to lie still with her legs together the first 24 hours; ambulation usually occurs between 24 and 72 hours.

The postpartum patients are kept in large rooms usually having from four to six beds. Current hospital construction does not include bath rooms for each ward, and, in general, every bed has a bedpan or commode under it. The mother is supposed to sleep 10 hours a day: 6 hours at night (midnight to 6 a.m.) and 4 hours during the daytime.

Nursing is so thoroughly stressed that no other provision is routinely made. The babies are brought out on a 3-hour schedule, omitting the 3 a.m. feeding. A 10-percent chloramine solution is used for cleansing the nipples. The incidence of cracked nipples is cited at 5 to 6 percent and is treated with ultraviolet light. The incidence of breast infection is said to be under 1 percent. Both these statistics, however, apply only to in-
ts of maternity hospitals.

ld breast feeding fail, the mother is pro-
vith breast milk from one of the breast-
nks. An effort is made to keep each child
st milk—either from its own mother or
e bank—until it is at least 4 months old.
customary postpartum hospital stay is 9
In the event the baby should need longer
lization, or in the face of complications,
riod of hospitalization is extended liberally.

The delegation did not get the impression of any shortage of maternity beds either ante- or postpartum. During this period neither the husband nor other members of the patient's family may visit her. The husband, who has not seen his wife since she arrived at the hospital, is notified of the safe arrival of his child and of its gender on the day of delivery. He first sees the baby and mother when she is discharged on the ninth day postpartum.

Check-up Examinations.—Routine postpartum examination is held at 6 weeks when the patient usually returns to the obstetric and gynecologic hospital in her neighborhood. Contraceptive advice is universally given, and the contraceptive techniques available are similar to those customarily prescribed in this country.

Sterility.—The problem of the infertile couple concerns the Soviet Union as it does this country. It is estimated that from 10 to 15 percent of marriages are involuntarily barren.

In studying this problem medically, one notes again the liberal use of hospitalization, particularly for the diagnostic studies of the wife. Hysterosalpingography is used and studies are being carried out in contrast media and the functional state of the uterine tubes. In Tbilisi, a program of studying the possibility of tubal transplant is underway. Reconstructive surgery for the fallopian tubes, however, is not as common on a clinical level as it is in the country.

Ovulation is determined by pregnandiol determinations as well as the basal body temperature determinations. There is, on a research level, interest in vaginal cytology as an index of endocrine malfunction in sterility. Sperm counts are carried out, and indicators are being studied which would determine the reproduction capacity of sperm. Thirty percent of infertility is reported to be due to the male, and a 20-percent cure rate for all infertility was cited. Artificial insemination has no legal status: i.e., there is no specific prohibition nor any legal endorsement.

Abortion.—Although abortion is legal in Russia, the problem of criminal abortion has not completely disappeared. The request for abortion is considered by a committee physician. If there are medical indications for abortion it is performed free. If the indications are purely sociologic and patient-requested, a fee of 50 rubles is charged the woman.

Obstetric Research—Medical research in the U.S.S.R. is dominated chiefly by the Academy of Medical Sciences and the Ministry of Health. These two organizations set the direction which the research of any area is to pursue.

In the field of human reproduction, the announced topics which are currently the approved subjects for medical investigation are (a) the Climacteric, (b) the Toxicoses of Pregnancy, (c) Psychoprophylaxis and (d) the Pathophysiology of Development of the Fetus with particular reference to the prevention of asphyxia, stillbirth, and prematurity.

While the first of these topics is actually outside the purview of the present delegation, it illustrates some general principles which deserve comment. In reading the directives, it becomes apparent that not only is the line of investigation stated, but the results of the research are implied. Secondly, with respect to this particular topic, the investigation is given a sharply utilitarian turn. The objective is to let the menopause interfere as little as possible with a woman's employability and industrial productivity. The Russians administer steroids on a short-term basis for managing menopausal complaints.

The investigative approach to the pregnancy toxemias is dominated largely by the "Triad of Nikolayev," a therapeutic regimen sponsored by the professor of obstetrics and gynecology in Kiev. This program calls for the administration of oxygen to the mother, the administration of a digitalis-like compound (on the basis that maternal venous stasis interferes with adequate transport of oxygen to the fetus) and the administration of glucose for glycolitic metabolism on the part of the fetus.

It can be seen that these measures are aimed largely at reducing the fetal wastage of preeclampsia-eclampsia, and do not concern themselves with correcting the physiologic and metabolic disturbances of the mother. Measures taken therapeutically to control the maternal situation include rest, isolation, the use of magnesium sulfate and compazine-like drugs. The eclampsia rate is quoted at 1 percent.

When a member of the delegation asked what the research interests were at a particular hospital and was told that the hospital was investigating the toxicoses, it usually meant that this particular program of patient management was being used, and that the patients on this program were being observed clinically. No control programs were in evidence for treating alternate patients, and the result of such "investigations" were largerly in the form of numbers of surviving infants.

In general, the "studies" on psychoprophylaxis were also of this type. The statement that such studies were being carried out simply meant that this particular program of pain relief was being used and this use constituted the clinical investigation. The delegation was told of the already published work comparing the serum-electrolyte levels of women on the psychoprophylaxis program with a group totally unattended in labor, with the finding of "better" levels in the study group.

As a topic for directed research, the subject "The Pathophysiology of Development of the Fetus, with particular reference to the prevention of asphyxia, stillbirth, and prematurity" has sufficient latitude that it covers a wide variety of investigative interests and approaches. It is presumably under this heading that many of the individual topics which the delegation saw as subjects of study are justified.

Chapter 3

Pediatric Care in the Soviet Union

Children's services are given high priority in the Soviet Union, and the State provides an extensive structure of specialized clinics, hospitals, and other institutions for the young. Preventive and curative services are combined in a comprehensive program from the prenatal period to age 15, when adolescents are transferred to adult polyclinics. No special adolescent services were found (with the exception of pediatric gynecologic clinics in the women's consultation centers) to care for abnormalities of puberty.

The Children's Polyclinic

The polyclinic provides preventive and curative services but does not treat acute illness, as do most outpatient departments in the United States. The children's consultation center, as part of the polyclinic, is staffed by a physician-pediatrician and one or two assistants (nurses) for each section, or uchastok, of the district, an area in which between 800 and 1,000 children live.

When mother and infant are discharged from the maternity hospital, the polyclinic is notified. The mother then is visited by her physician-pediatrician and a nurse during the first 3 days and subsequently by the nurse until she is able to go to the clinic herself. Thereafter, she brings the baby to the clinic about once a month during the first year. If she does not appear on schedule, the physician and/or nurse go to the home.

After the first year, the child is examined in the polyclinic 4 or 5 times a year. Clinic hours are staggered throughout the day and evening, in 2-hour shifts for each physician. Before and after his clinic session, the physician makes house calls, for which he is provided a car and driver. A physician-pediatrician works a 6-hour day, and a specialist works 5 hours.

The mother sees her own physician-pediatrician at the clinic, except when he is ill or away, and may call him by phone as necessary. Emergency service with ambulance is provided by the polyclinic after hours.

Other physicians and medical assistants on the staff of the polyclinic serve the children's institutions in the district—schools, boarding schools, kindergaterns, and crèches.

A polyclinic will have "cabinets" or special clinics for—

- Neurology
- Opthalmology
- Orthopedics
- Dermatology
- Otolaryngology
- Dentistry
- Surgery

and special services such as—

- Speech therapy
- Physical culture
- Physiotherapy

Children are brought to the children's consultation center or polyclinic regularly from early infancy through age 14. Every child has a record, beginning at birth, in which all facts pertaining to health and general development are recorded. Standard charts have been prepared for the determination of physical and mental growth. If the family moves from the district, the record is forwarded to the new location.

The immunization schedule for all children is as follows:

BCG—In the maternity hospital on third day of life by scarification method. Revaccination at 2 years.

Poliomyelitis.—Live virus (Sabin) is used. At 2 months, Type I; at 3 months, Type III; at 5 or 6 months, Type II; at 9 months, Types I, II, and III.

Smallpox.—Vaccination at 3 months.

Diphtheria and Pertussis.—At 5 months, with boosters at 3, 7, 9, and 12 years.

Tetanus.—None, but a triple D.P.T. is being prepared.

In the rural area the midwife gives the immunizations.

Medical Care for Children in the Home

When a child becomes ill, the mother telephones her physician-pediatrician at the polyclinic who visits the child that same day and daily until well. If necessary the child is hospitalized. At this stage the local physician loses control of the patient but resumes care when the child is discharged. A record of the child's illness in the hospital is sent to the polyclinic to be part of the child's permanent record.

If a mother does not wish her child hospitalized, arrangements are made to provide nursing care at home free of charge. The pediatrician-physician may call any specialist he needs into the home for consultation.

Hospital Care for Children

Inpatient care is provided in a variety of facilities. At the top level is a system of institutes of pediatrics oriented to research and teaching but also having clinical facilities. Examples of these are the Institute of Pediatrics under the Academy of Medical Science in Moscow and the Leningrad Institute. The latter, with 890 of its 1,100 beds for children, as a teaching institution receives many difficult cases from all over the U.S.S.R.

Other children's hospitals, though not accorded the title of institute (for example, the Rusakov Children's Hospital in Moscow), are supported by the Republic or municipality and may specialize in such areas as surgery.

In the hospitals the delegation saw, ranging down to 180 general hospital beds, there was always a separate unit for children. Within a pediatric department, there is usually a further breakdown—beds allotted for eye patients, for ear, nose, and throat patients, for neurological patients and other special groups, each with a chief of service.

A child usually is sent to the hospital servicing his district but may be transferred to a teaching or research hospital specializing in the conditions from which he is suffering. Within the hospital, the child is cared for by the hospital staff, not by his local physician-pediatrician, but a summary of the hospital record becomes a part of his polyclinic record.

The construction of the hospitals visited was much the same—large, gloomy buildings, with few amenities. Infants were often cared for in wards with cubicles, enclosed and without outside ventilation. Hand washing facilities were few, were not in the cubicles, and were without elbow or foot control. No separate facilities were provided, and the nurses went from cubicle to cubicle without washing their hands.

In the infant wards we saw patients with pneumonia, otitis media, nutritional problems, hemolytic anemia, and chronic sepsis.

Nursing service seemed adequate. For example, in one 14-bed cubicled unit, there were two nurses on duty for each 6-hour shift. Mothers stay with infants to nurse them, but for weaned babies and older children, no mothers are allowed unless the child is very ill.

For children beyond the infancy stage, there were usually wards of from 10 to 20 beds. Cots were low and were without sides. Walls were often decorated with fairytale figures, but almost no toys were available for the children. Children as a rule lay quietly in bed, and if a young one whimpered, an attendant went quickly to comfort him. Although in general the wards were quiet, reports by other observers of *absolute* quiet were not borne out. Infants and children *did* cry, and lustily.

Pneumonia and respiratory diseases were common. So was rheumatic fever and tuberculosis, although the delegation did not visit special hospitals for these conditions. For the treatment of respiratory disease, fresh air therapy, reminiscent of the practice in this country 30 to 40 years ago, is used. Many children, bundled in sleeping bags, were on porches or in pavilions in the gardens.

Liver and gall-bladder disease was said to be very common in children. In a hospital of 100 pediatric beds, 40 cases a year were reported. The delegation saw a number so diagnosed, without X-ray but by use of duodenal tube.

Whooping cough and diphtheria are becoming rare.

Cystic fibrosis is very rare. Some hospitals, for example the Institute of Pediatrics in Leningrad, never had seen a case, though the literature on the subject was known.

Phenylketonuria was unrecognized.

Surgical treatment of congenital heart disease is beginning.

In one institution the delegation saw a large number of cases of congenital dislocation of the hip being treated at a late age. One rural oblast seemed to supply the majority of these. This condition is under intensive investigation, and the

question of the possible relation of swaddling was being studied.

Another concentration of unusual cases was that of renal stones in a hospital in Georgia. The youngest patient here was 1½ years old, but the average age was 10-to-12 years.

At still another hospital, the delegation saw a large group of patients—two wards—with duodenal ulcers, the youngest of whom was 1-year-old.

Leukemia in children is said to be on the increase.

Their tonsillectomy rate is reported low, but no figures were given. Local anesthetic is used and often only part of the tonsil removed.

A question concerning circumcision caused some embarrassment and met with the flat and emphatic statement that it is never done.

In spite of much searching, the delegation was unable to learn of any emphasis on early diagnosis of possible brain injury. The physical examination of the newborn which the group saw only once, and then after much prodding, was relatively thorough. The physician's impression that this infant had suffered possible injury was based on history of breech delivery and the finding of some hypertonicity. The statement was made that though reliance was placed in the physician's examination to pickup neurological signs, it was really the mother who detected early defects and brought the child to the polyclinic. In the clinic he would be seen by a neurologist who would use electroencephalograms. No studies appeared to be in progress on early detection of brain damage.

Care of Newborn and Premature Infants

A number of nowborn nurseries and premature units, which proved to be remarkably alike, were visited.

The newborn is weighed and measured by the midwife, cleaned up, and his cord dressed. He then is wrapped securely with his arms at his sides and legs straight out. After 3 days, the arms are removed from the wrapping but are placed in closed sleeves of a gown.

Nursery units usually contain from 15 to 20 babies, and several units are available so that rotation can be accomplished. Discharges take place from a unit, without new admissions, so that each nursery is cleared and unoccupied at intervals. Nurses, however, go from unit to unit. There is a common bathing table, usually only one inadequate hand washing facility for each nursery of several units, and a common towel.

The premature rate quoted was always low. Premature nurseries usually divide the infants by weight groups. Facilities are much like those in newborn nurseries. Beds electrically warmed or heated by hot water bottles are used for small babies. Their heated bed is called "couveuse" and is produced at Karkhov.

This bed has a thermostatically controlled, built-in electric heating element, and suspended on a right angle bar over the crib is a radiant heat device. When an infant needs oxygen, a plastic dome covers the incubator. A slightly concave heated table is used for dressing and manipulation.

In one nursery, the delegation saw an enclosed incubator made in the Soviet Union. Oxygen is used freely, but since most of the incubators are open-type, the concentration is probably low. Breast milk is used exclusively. If the baby weighs more than 1,500 grams and can suck, it goes to the breast. If he weighs under 1,500 and can suck, he is given breast milk by bottle. If he is unable to suck or is under 1,000 grams, he is fed by gavage. The mothers stay—or return by day—in the hospital in order to breast feed.

Feeding of Infants

The objective of the feeding plan is to keep the infant on the breast for 6 months. Though this ideal is not always obtained, most infants are breast-fed for at least 4 months. A strict schedule of feeding is prescribed, on a 3- or 4-hour basis. Provision is made for mothers who work to have time off to nurse their babies.

If the mother does not have enough breast milk, it may be supplied from a milk kitchen. Sometimes a special formula is prepared in a milk kitchen, on written prescription from a physician.

Frequently a sour milk is used. Cottage cheese is given early if the weight is not satisfactory. Cereals are begun at 5 months, though they may be started earlier if the mother's milk supply is not satisfactory. Vegetables are normally given at 5 or 6 months. Vitamin D, in the amount of 4,000 to 5,000 units, is started between 6 and 8 weeks, with a switch in a short time to cod liver oil, which is continued to 7 years of age. Vitamin C is started shortly after Vitamin D in the form of carrot juice, cabbage juice, or orange juice (oranges are very expensive and extremely hard to obtain—it is doubtful if babies get this).

The prescribed diet is determined by experts in the Institute of Nutrition. The criterion for adequate growth is the height-weight ratio.

Crèches and Kindergartens

The nurseries for children of working mothers take youngsters from 3 months to 3 years, and the kindergarten from 3-to-7 years. At present, crèches are administered by the Ministry of Health and the kindergartens by the Ministry of Education. The plan now is to put them all under Education, so that a continuous process of training the child can be obtained. The health personnel and program will continue to be the responsibility of the Ministry of Health. A combined crèche and kindergarten is also part of the new plan.

Many of the crèches and kindergartens are built, equipped, and maintained by factories, with the Government supplying the staff and directing the program. A workers' committee selects the children to be admitted and gives some volunteer service, such as helping with celebrations.

Nurseries and kindergartens are open as many as 8, 10, or 12 hours a day and some for the full 24 hours.

Parents pay from 20 to 100 rubles a month (against a cost of 300 rubles), the charge depending on the family income and size.

Staffing is generous. Teachers have had a 5-year course in the pedagogic faculty, after completing the 10-year school. Within the framework of a program laid down by the Government, each nursery works out its own schedule of activities. Children are divided into age groups and are expected to conform to rather rigid requirements.

The medical staff is supplied from the children's polyclinic. Children in the crèche receive their well-child care there rather than in the consultation center, and summaries of health records are forwarded to the Children's Consultation Center. If the child becomes ill, he is sent home and the polyclinic doctor (not the nursery doctor) takes over.

Adoption of Children in the Soviet

As in the United States, there are not enough babies available for adoption. Illegitimacy is no considered a social problem, as there is little o no social stigma attached. Marriage cannot tak place until the age of 18. Since abortion is legal no girl must carry her child to term if she become pregnant illegitimately. However, if she wishe to have the child, she may provide for it in severa ways—keep him and receive an allowance, giv him to the State to raise in a nursery where sh may see him, and remove him to take care of hi herself anytime she wishes. Because of this ar rangement, giving a child for adoption is rare.

Physical Fitness Program

Great stress is laid on exercise and fresh air as conducive to health. A system of massage and exercises to be given during infancy and early childhood has been developed through special research. Mothers are taught these exercises in the children's consultation centers and booklets describing them are given out. The demonstration the delegation saw showed responsiveness from the children and pleasure in the performance. During nursery, kindergarten, and school years, formal exercises are routine. These are designed to contribute to group activity and conformity, as well as to physical well-being.

"Hardening" consists of exposure of arms and legs to cold air, the use of cold baths, and sleeping in the open air. In hospitals and kindergartens infants and children were sleeping in bags on porches or outside, regardless of the weather.

Chapter 4

Obstetrics, Pediatrics, and Related Education

There are today 58,000 pediatrician-physicians in the Soviet Union, and when the present Seven-Year Plan is completed in 1965, there will be close to 75,000. They are being graduated from medical schools at the rate of 3,000 each year. The goal of the Soviet Government is to have 1 pediatrician for every 1,000 children.

To accomplish this striking achievement in numbers, the Soviet Government has created a unique system of medical education. The medical education is entirely planned, to the last detail of the curriculum, by a central authority—the Central Planning Office on Medical Education of the Ministry of Health of the U.S.S.R. As far as possible, therefore, the medical education is uniform throughout the country.

The higher medical institutes (medical schools) are all divided into three faculties: (1) the therapeutic, (2) the pediatric, and (3) the sanitational-epidermiological. Each faculty functions independently and conducts a course of instruction of 6 years in duration. Upon completing the course of instruction on the pediatric faculty the graduate is awarded the degree of *vrach-pediatr* (physician-pediatrician). Almost all the students of the pediatric faculty are women (an exact number is not available). They are admitted by competitive examination to the medical institute, usually at the age of 17 years, having completed the 10 years of basic schooling required of all Soviet children. The competitive examination is written in three subjects: Marxism, biology, and a foreign language. The student is charged no tuition fee and 15 percent of the students receive a scholarship or stipend while in school.

Courses Given "Pediatric Slant"

The course of instruction of the pediatric faculty emphasizes, from the basic sciences through the final 2 years of clinical instruction, the problems which are peculiar to the pediatric age group so that even the basic sciences are given a "pediatric slant."

During the first and second years the student takes 160 hours of the History of the Communist Party of the Soviet Union, 90 hours of Political Economy, and 140 hours of Dialectical and Historical Materialism. The first 2 years also require 220 hours of foreign language, which includes a course in Latin. During the first 2 years the following basic sciences are taught: [1]

	Hours
Physics	136 (40)
Biology	190 (104)
Human anatomy	392 (274)
History and embryology	182 (116)
Inorganic chemistry	140 (86)
Organic chemistry	295 (164)
Physiology	247 (115)
Microbiology	207 (137)

During the third year pathology and theoretical materials of clinical subjects are emphasized as follows:

	Hours
Pathological physiology	155 (87)
Pharmacology	174 (106)
Pathology	188 (105)
Principles of internal medicine and radiology	229 (130)
General surgery	189 (102)
Operative surgical anatomy	102 (68)
Hygiene	185 (102)
Principles of pediatrics	121 (68)

The last 3 years of the program are devoted to clinical clerkship and to the presentation of didactic material in the clinical subjects and public health. A breakdown of the time devoted to the various subjects is as follows:

	Hours
Organization of Health and Welfare	124
Medicine	170
Surgery	167
Dermatology and venereal disease	96
Neurology	102

[1] Number in parentheses indicates hours out of total for laboratory work.

	Hours
Pediatrics	191
Infectious diseases	140
Obstetrics and gynecology	229
Pediatric infectious diseases	332
Ear, Nose, and Throat	95
Opthalmology	85
Inpatient medicine	140
Inpatient pediatrics	464
Inpatient surgery	210
Pediatric surgery and orthopedics	170
Psychiatry	95
Legal medicine	85

During the last 2 summers of schooling the student spends 8 and 4 weeks respectively doing practical medical work in a nonacademic setting.

The Harvard Medical School curriculum is included for comparison. (See page 19.)

Upon completion of the course, the student almost always takes a position in a pediatric clinic, a hospital, a nursery or kindergarten, or goes to a rural area. Advertisements of such available jobs appear in the *Meditsinsky Rabotnik*, a medical professional newspaper. Only in rare and exceptional instances does the student go on immediately to postgraduate training without serving at least 3 years in some practical situation. During this practical interlude, the physicians are rotated so that optimally 3 months of the year are spent in an academic center for postgraduate training.

Can Be Clinical or Laboratory Work

The postgraduate training can be either of a clinical type, closely resembling a residency in the United States, or of pure laboratory work. Often both approaches are combined. In any case, individuals in the first 2 years of formal postgraduate training are called the *ordinatura*. Upon completion of the work of an *ordinatura*, the physician may proceed to become an *aspirantura*. An aspirant receives 3 years of postgraduate training which may again be clinically or research oriented. It is expected of the aspirant that he write a thesis on an original subject or original investigation at the end of his training. If the thesis is accepted, the physician becomes a so-called "candidate of medical sciences." The presentation of another thesis on original work then makes the physician eligible to become a doctor of medical sciences. An interval of 8 to 10 years elapses usually before a candidate becomes a full-fledged doctor of medical sciences.

Such postgraduate training as has been outline above is, in its advanced stages, almost entirel limited to physicians who remain in the academi environment. It is indeed rare to become a docto of medical sciences much before 40 years of ag Thus, in one sense, this articulate program of pos graduate training has created a "double standard separating the practicing from the academic pedi atrician by a wide gulf, despite the fact that re fresher courses and experience at academic center for 6-month periods are available. On the othe hand, the system of medical education offers th advantage of having the children of the Sovie Union cared for by physicians whose fundamenta orientation has been well grounded in pediatri medicine.

The Future Obstetrician-Gynecologist

In contrast to the pediatrician, the future ob stetrician-gynecologist receives no specialized course of instruction in the medical school. He obtains his medical education in the therapeutic faculty which offers a more generalized medical course to those students who will specialize during their postgraduate training in such fields as surgery, the surgical specialties, and internal medicine. Consequently, the specialized training of the obstetrician-gynecologist is entirely postgraduate and follows the outline of the *ordinatura* and *aspirantura* as presented above. It is possible to switch from one specialty to another regardless of the faculty on which the medical schooling was obtained. For example, a graduate of the pediatric faculty could be qualified in obstetrics and gynecology by virtue of his postgraduate training in this specialty. There are but half as many obstetrician-gynecologists in the U.S.S.R. as pediatricians. The obstetrical function of these specialists is largely supervisory, or academic, as almost all the deliveries in the Soviet Union are conducted by a force of some 200,000 midwives.

"Medium Medical Workers"

The midwife is but one of the so-called "medium medical workers." This category also includes laboratory and dental technicians, nurses, pharmacists, and feldschers. The feldscher and the midwife may obtain their specialist's qualification by attending school on a part-time basis, in which case the course of instruction lasts for 3 years and 10 months, or on a full-time basis, in which case

the course of instruction lasts 2½ years. The feldscher is qualified to administer first aid and to deal with simple medical problems without supervision. They largely serve the rural population where medical centers may be widely spaced. The midwife is qualified to conduct uncomplicated deliveries without supervision. Many feldschers and midwives choose to enter the medical schools at a later date. The first year's course is the same for both feldschers and the midwives. It includes:

	Hours	
1. Russian language and literature	311	
2. History of the U.S.S.R.	275	
3. Mathematics	209	
4. Physics	133	(17)
5. Chemistry	114	(20)
6. Foreign language	182	
7. Latin language	70	
8. Biology	95	(21)
9. Anatomy	190	(40)
10. Physiology	114	(20)
11. Microbiology	95	(10)
12. Pathology	114	(24)
13. Pharmacology	182	(42)
14. Hygiene	68	(18)
15. Organization of Health	54	(22)

The feldscher's course of instruction is then completed as follows:

	Hours	
16. General care of the sick	114	(74)
17. Internal medicine	406	(206)
18. Surgery	412	(212)
19. Obstetrics-gynecology	350	(180)
20. Epidemiology	80	(40)
21. Infectious diseases	194	(68)
22. Pediatrics	200	(130)
23. Dermatology and venereal disease	95	(45)
24. Neurology and psychiatry	90	(42)
25. Ophthalmology	72	(32)
26. Dentistry	45	(20)
27. Ear, Nose and Throat	72	(30)
28. Physiotherapy	120	(60)
29. Elective	185	(20)
30. Physical training	218	(218)

The midwife's course of instruction is then completed as follows:

	Hours	
10. Internal medicine and care of the sick	378	(200)
17. Surgery	334	(170)
18. Obstetrics	520	(280)
19. Pediatrics	247	(127)
20. Infectious diseases	168	(70)
21. Gynecology	222	(112)
22. Dermatology and venereal disease	95	(45)
23. Neurology and psychiatry	95	(41)
24. Physiotherapy, massage and physical culture	118	(60)
25. Ophthalmology	72	(32)
26. Ear, Nose and Throat	76	(30)
27. Elective	135	(20)
28. Physical training	218	(218)

It can be readily seen in comparing the course of instruction for the midwife with that of the feldscher that the emphasis is shifted toward obstetrics and gynecological instruction for the future midwives.

By comparison, the Harvard Medical School course of instruction consists of:

		Hours
I	Anatomy	280
	Histology	280
	Physiology	256
	Biochemistry	256
	Medical Psychology or Growth and Development	100
II	Bacteriology	200
	Laboratory Diagnosis	100
	Physical Diagnosis	145
	Pathology	357
	Pharmacology	100
	Surgery	100
	Biostatistics and Psychology	100
III	Medicine	213
	Pediatrics	68
	Surgery	181
	Obstetrics	128
	Preventive Medicine	135
	Dermatology	37
	Neurology	30
	Psychiatry	48
	Gynecology	33
	G.U.	27
	Ear, Nose, and Throat	33
	Ophthalmology	31
	Orthopedics	28
IV		

Chapter 5

Research

Academy of Sciences

The Academy of Sciences of the U.S.S.R., created in 1724 by Peter the Great to promote research in biology and medicine, followed closely the basic plan of the Academy of Sciences in Paris. It established close ties with European scientific institutions which continued until the October Revolution in 1917. During this period, research in medical and related fields developed along many lines as a result of individual interest and ability, and several workers of that era gained recognition as being among the world's greatest scientists.

Following the 1917 Revolution, the activities of research workers were turned to much more materialistic lines, and research became directed largely toward providing answers to problems of immediate practical concern.

Academy of Medical Sciences

The Academy of Medical Sciences of the U.S.S.R., established in 1944, as an independent unit directly responsible to the Ministry of Health, is the Government agency given responsibility for the nation's health and for conducting its medical research. It functions through the Ministries of Health of the Union Republics and concerns itself with all aspects of medicine and medical services. Research is carried out under the general auspices of the Ministry of Health by the (1) institutes of the Academy of Medical Sciences, (2) special institutes of the Ministry of Health of the U.S.S.R., and (3) institutes of the Ministries of Health of the Union Republics.

The Academy of Medical Sciences is responsible for the training of scientific workers in the field of medicine, for examining problems assigned by the Government and Ministry of Health, for formulating and giving priority to problems for research, for resolving questions of practical application of new methods of treatment, and for giving scientific approval to major discoveries in the field of medical research. To carry out these directives it was empowered to establish research institutes in the field of medicine, to publish lists of subjects permissible for research, to examine and accept plans and reports of scientific work on institutes, to provide for the training of aspirants for the degrees of candidate for or doctor of medical, biological, and pharmacological sciences, and to otherwise further the theory and practice of medicine.

Subordinate to Ministry of Health

In all things the Academy of Medical Sciences is subordinate to the Government through the Ministry of Health, and the latter is empowered to alter the status of the Academy of Medical Sciences or to otherwise modify its activity in any way. (For a detailed account of the Academy of Medical Sciences see Public Health Monograph No. 63.)

Research in the medical field as carried out at the present time is almost completely directed by the Government acting through the Academy of Medical Sciences. The subjects on which research is permitted, and the institutes in which it is carried out is all determined by, or subject to the approval of the controlling body of the Academy. It is recognized that the efficiency of the state is related to the health of the workers and that childbearing and child rearing are of fundamental importance. Consequently, problems related to these areas—such as toxemia of pregnancy and infant mortality—are currently of high priority. To be an acceptable problem of research the solution must have a direct, foreseeable application.

Pavlov Considered Greatest Scientist

Pavlov is still considered the greatest Russian scientist, and his work forms the basic pattern for most medical research. All conclusions reached

must be compatible with his teachings of the significance and importance of conditioned reflexes.

The research activities described and observed by members of the delegation were necessarily limited. In all instances our visits were largely occupied by being subjected to a lecture by the head of the institution on the history and importance of the institution and the difference in the U.S.S.R. now and under the Tsarist regime. Relatively little time was available to go into the intricacies of research. In some places simple demonstrations were set up for our observation, but in almost no place was it possible to discuss details of methods of procedure or results with the investigators.

The individual research projects varied greatly in design and in equipment available for their perusal. Since the Government decides upon the fields in which research may be undertaken and expects that any project proposed will be capable of providing material that may be applicable to the solution of a specified problem, there is little "basic" research and almost all falls in the category of "applied" research. In some laboratories there were persons who appeared to be of great promise and in other laboratories a fairly uniform investigation seemed to have been carried on for many years without producing any new results. As in all places in the world where research is carried on, some studies seemed very good and some seemed useless.

Chapter 6

Statistics [1]

The field of health statistics in the U.S.S.R. is divided into two main phases. One is called research statistics and the other is state, or Government statistics. The state, or Government, statistics consist of data from geographic areas where each oblast and other units in the republic have medical statisticians assigned to them. The Central Statistical Bureau of the Council of Ministers of U.S.S.R. compiles the data gathered from these oblasts and prepares tabulations for all the republics in the area of vital statistics. It carries the responsibility of informing the Ministry of Health about final counts and tabulations.

The research statistics encompass the enumeration and tabulation of data pertaining to specialized organizations, hospitals, research institutes and the like. Each hospital, outpatient polyclinic, academic or research institute has a medical statistician, records clerk, or archivist assigned to it.

In helping to gather the Government statistics, there is a standard to decide upon the number of statisticians employed per unit of population in the oblasts and republics. This standard is quite variable, however, depending upon the number of research institutions and research statisticians already present in the area.

The basic philosophy underlying all data collection is to have a complete record on every child starting with the antepartum history and continuing through school. Although the information is available, it is sometimes scattered in several places and may be difficult to collate. The children's polyclinics, however, go a long way toward bringing together all this information as will be discussed later in this section.

The principle behind the collection of health statistics is that each doctor is responsible for reporting observations and measurements on his patients. This responsibility is extended to include the medical assistant who, with the doctor, makes a record of the details of each visit made by a child to the polyclinic, or by one of them to the child's home, school, nursery, or kindergarten. The district doctor is, in addition, provided with demographic information for his particular area. This makes it possible for him to be held responsible for the evaluation of results in his own district.

Vital Statistics

Birth Registration.—The procedures for the registration of births are closely linked with the system of medical care. Inasmuch as less than 1 percent of all deliveries occur outside of the hospital or maternity home, the event of birth is known immediately to the republic authorities.

Each birth is registered by the doctor or midwife in the hospital or maternity home on the forms or records for that institution. When the child is discharged alive from the institution, the parents (or at least the mother) are given by the hospital a notification of birth form. The parents are supposed to take this form to a local registrar "ZAGS" within 1 month for official registration and to receive the child's identification papers. In addition, the hospital notifies the children's polyclinic servicing the area in which the mother lives so that infant care and supervision can start within 3 days of the discharge of the baby from the hospital.

In a country where each and every citizen must carry an identification document similar to a passport, it is to be expected that under-registration of institutional births is almost nonexistent at the present time. The statistical authorities claim that there is absolutely no problem of underregistration of births in the urban areas and probably less than 1 percent in the rural areas. This has never been verified against a survey or census procedure although the Director of the Division of Medical Statistics indicated that such a test will be conducted next year in the Ukraine Soviet Socialist Republic.

[1] Much of the information in the first part of this chapter is based on an oral report by Dr. G. F. Tserkovny, director for the Division of Medical Statistics, Ministry of Health, U.S.S.R.

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When a child has been born alive and was not considered a miscarriage or fetal death, but dies in the hospital before its discharge, the hospital assumes the responsibility of notifying the local registrar without going through the parents. The hospital also performs this role in the case of fetal deaths, and in those cases where the father is not known and the mother dies as a result of the pregnancy.

The local registrar is an official of the geographic unit and is an agent of the Central Bureau of Statistics. The latter agency collects not only data on health but is responsible for all Government statistics including labor, economics, manufacturing, agriculture, etc. The Central Bureau of Statistics has a unit in each republic and geographic subdivision thereof. The Central Bureau of Statistics compiles the data on births for each republic as well as the entire country and then forwards such tabulations to the Ministry of Health.

A live birth is defined as the birth of an infant that weighs more than 1,000 grams *and* breathes. All births under 1,000 grams are classified as abortions or early fetal deaths even if the child should live for several days or weeks. An infant born with a weight less than 1,000 grams has to be discharged *alive* from the premature ward or hospital before being included in the vital statistics as a live birth.

The only criterion distinguishing fetal death from live birth is breathing. Movement of voluntary muscles, heartbeat or cord pulsation regardless of the length of time they continue are not considered, by themselves, indicators of a live birth.

There was considerable difficulty in obtaining a fixed definition of prematurity which was used in vital statistics rates. In general, prematurity appears to be defined as the state of an infant weighing less than 2,500 grams *and* measuring less than 45 cms. in crown-heel length.

The notification of birth form which is given to the parents does not contain any descriptive information about the birth, such as birth weight. Since this form is the one filed by the parents with the civil authorities of the Central Bureau of Statistics, it is almost impossible for such agencies to calculate precisely the distribution of births by birth weight, or infant deaths by birth weight for large geographic areas. The birth weight and other birth data are on the form which is sent to the children's polyclinic so that estimates of prematurity incidence, for example, must be based upon data from either children's polyclinic records or hospital records. If based upon polyclinic records, the prematurity figures would not include children who died in the hospital because the polyclinic is presumed to receive data only on those discharged from the hospital for the sole purpose of transferring the responsibility of medical care. The prematurity figures would probably be more accurate if the basis of calculation was the compilation of data from all maternity homes in a geographic area including those special maternity hospitals that are particularly designated for the delivery of the premature infant.

Stillbirth Registration.—The term stillbirth is used instead of fetal death but one cannot be sure that its usage is only because of the translation of a Russian phrase that means "dead birth." The registration of stillbirths with the civil authorities is done by the hospital personnel. In order to be classified as a stillbirth, the fetus must be longer than 35 cms., weigh 1,000 grams or more, and, be at least 28 weeks or more gestation. If any one of the three values is less, the event is considered an early fetal death or abortion and not enumerated as a stillbirth in the vital statistics.

The notification form for the stillbirth is the same as the death certificate. A special section of the certificate is designated for stillbirths.

Death Registration.—The doctor in attendance at the time of death fills out a death certificate for the relatives who must file it with the civil authorities. The medical certification of the cause of death goes directly to the Central Bureau of Statistics for processing in the local and regional offices. This helps to assure confidentiality of the cause of death.

An unattended illness resulting in death is handled by a medico-legal system on a special form. The corpse is sent to a medical jurisprudence center where appropriate records are made.

A death attended by a homeopath must be reported by the rayon or district doctor. The cause of death certification on this, as well as other events, is checked by the regional authorities receiving the form. If there are any questions or other problems, they query the doctor.

The cause of death is supposed to be certified within 24 hours but apparently there is no real limit if the doctor wishes to await autopsy report

Changes in classification of the cause of death can be made after an autopsy report although it is doubtful if this is done on other than rare occasions.

The matching of infant death certificates with birth certificates is done on neither a routine basis nor as a special study. The health authorities feel no need for it since the records are usually filled out by the persons in the same hospital and are kept on file with the registration authorities. They feel that any special studies relating births with deaths could be performed directly in the hospital.

Marriage and Divorce Registration.—This is a function of the Central Bureau of Statistics. The health authorities are not involved in this activity.

Morbidity Data

Epidemic Diseases.—The diseases that are considered reportable under this category include brucellosis, chickenpox, diphtheria, dysentery, encephalitis, influenza, malaria, measles, pertussis, pneumonia, poliomyelitis, rabies, scarlet fever, tetanus, tularemia, and typhoid.

Each doctor who sees a patient with a reportable disease is required to report the case to the district sanitary-epidemiological station. These stations are distributed throughout the oblast and krai.

The medical and statistical authorities feel that reporting morbidity in all rural and urban areas is excellent. They believe that morbidity reporting is generally complete except for influenza and pneumonia. The reason for this incompleteness is that the patient may be treated at an outpatient clinic for these latter conditions. Thus they attempt little or no routine checking on the completeness of morbidity reporting. They see no need for a physical health or morbidity survey, or in checking causes of death on the death certificate to see if morbidity forms had been submitted. In certain diseases, reporting is probably complete (and perhaps overreported) because the worker (or child) needs certification for absence from job or school, and hospitalization is likely in the more serious diseases.

In the epidemic diseases, the report form and information about the individual patient are kept at the district or rayon level. In forwarding information to the next higher unit in the republic's health network, only the number of cases is reported by diagnosis. Hence, national figures of incidence by age, race, sex, etc., could not be compiled on large geographic units such as the republic unless such data are included in the information transmitted for that disease.

Nonepidemic Diseases.—This category includes diseases like cancer, tuberculosis, and venereal diseases. Each case is reported by the responsible doctor to the rayon hospital which, in turn sends the information to the oblast station. These stations maintain special registers to check duplicates, allocate cases by residence, and perform various clerical tasks with the case reports.

Special registers are compiled for all known cases and an attempt is made to keep these current. Allocation problems are difficult because a case may have been reported by the doctor in an industrial plant but the patient lives in another district. Also, when a patient moves from one district to another, an attempt is made to keep the register correct and up-to-date in this respect.

This area of health statistics is one type of health reporting where the authorities readily acknowledge the underregistration problem but do not specify its cause other than the problems of residence allocation.

Use of Morbidity Data.—Each doctor treating a reportable disease prepares, in addition to the morbidity report form, a special card for the hospital records or children's polyclinic for that institution's own use. All of these cards are compiled in the statistical record room of the clinic or hospital. The workers in that institution study these records and determine such characteristics as duration of disease, as well as checking on the clerical aspects to eliminate duplicate reporting and other problems.

Every month, each district doctor (pediatrician, internist, etc.) is provided with special tabulations on morbidity to compare his local figures against those of others in the rayon. If the doctor desires special additional information for his local district, such as the age distribution of the children, he can also obtain that. In this way, each doctor is held responsible for the health of those children in his local district.

In view of the fact that each doctor is responsible for his own district, he must receive instruction in the use of vital and health statistics. He receives several lectures on this phase of health as part of his training in the course on organization of public health and medical care.

Each clinic and hospital also prepares a summary at the end of the year. All reports for the oblast (and higher governmental units) are compiled by collecting data from the polyclinics and hospitals in that oblast.

In the children's polyclinics, the data are separated for children under 1 year of age, and those from 1 to 2 years old. The data on these young children not only includes information on morbidity but also data on attendance at well-child conferences, milk supplements, etc.

The statistics obtained in hospitals are handled in the same way as in the children's polyclinics. Monthly and annual summaries are forwarded to oblasts, and summarized there for transmission to higher governmental units. The one additional use of hospital data is for internal studies of hospital use and management. Different departments in the hospital receive periodic tabulations of patients admitted and discharged with cross-classifications by such items as diagnosis.

Based upon the observations of the record and archive rooms in several polyclinics and hospitals (and research institutes), it is highly improbable that machine tabulating or other automatic processing is ever done in the health field. The methods observed were hand counting and the universal use of the abacus. All forms were made for entries to be handwritten. The forms appeared to contain very detailed information which had been meticulously and conscientiously written in by nurses, midwives, doctors, and dentists.

The children's polyclinic maintains a folder for each child. The folder is originated as soon as the maternity hospital provides notification of th birth with the revelant birth data. This folde is maintained by the polyclinic on a current bas until the child finishes school and is used to recor all health and medical information. Not only i the child's growth pattern recorded but all vacci nations, diseases, hospitalizations, treatments, an health problems are noted in this folder. Th folder remains with the polyclinic and entrie are made in it whether the child receives th diagnosis or treatment at home, in the clini crèche, nursery, or school.

These health folders provide an excellent sour of data for longitudinal growth studies as well a means of determining the health status of th nation's children in a cross-sectional study. Th form of the folders, however, makes it inco venient for automatic processing and many man hours would be necessary for any study. Neve theless, the basic data are there and from wh could be gleaned by a tiny sampling in two three clinics, the records appear to be maintaine excellently.

These folders are filed in open shelves in th record room of the polyclinic. The color of th outside wrapper varies with the district of th child, and folders are filed by color, and therefo by residential districts. Each doctor has his ow color folder. Within each district the folders a filed by streets and numbers on the streets. was amazing to see how rapidly the clerk cou locate a child's folder according to his home a dress. It is not known what steps are taken eliminate obsolete folders in order to avoid a clo file.

Chapter 7

Pathology

Examination of tumors and other material removed surgically is said to be invariably carried out by an experienced pathologist and autopsies are reported to be performed (without necessity of family permission) on practically all dead persons.

The doctor who has attended the deceased person during life is supposed to attend the autopsy to ascertain the cause of death before filling out a death certificate. He is also said to ascertain whether microscopic examination of tissues confirms the diagnosis and if not, he is responsible for changing the diagnosis. Death certificates are given to the family, who must take them to the proper authorities for recording.

In few instances was the delegation able to see any of this work in progress. In most instances we were told that pathologic material was handled in another institution at some distance from the hospital being visited. When data on frequency of cause of death or variety of surgical material was requested, we were informed that this must be obtained from the Ministry of Health.

The equipment in the few laboratories the delegation was able to visit, where pathologic material was being prepared for microscopic examination, was very meager. However, it seemed to be adequate for the purpose for which it was being used. Nowhere did we see any evidence of storage of gross material or microscopic slides. We were told that material, including histologic sections, was ordinarily discarded as soon as the diagnosis was made, unless a case was of great interest because of its rarity.

The Institutes of Obstetrics and Gynecology in Moscow and in Leningrad have extensive pathology museums. These are kept in excellent condition, although most of the specimens have become markedly discolored by age. They are said to be in constant use by undergraduates studying pathology.

Dr. Nina Maksamovich of the Institute of Infectious Diseases in Kiev is one of the people most interested in the pathology of the fetus and infant in the U.S.S.R. She formerly headed a service doing autopsies on large numbers of fetuses and infants, but is now studying the histologic appearance of lesions produced by the influenza virus. She stated that the lesions are largely pulmonary and consist only of pneumonitis and hyperplasia of bronchiole epithelium but that positive diagnosis can be made by examining fresh tissue under ultraviolet light following the application of acridene orange. A diagnosis can be made rapidly on living patients by obtaining epithelial cells from their throats and staining with this dye.

She has been successful in culturing influenza virus from dead fetuses, some of whose mothers had symptoms of influenza and some of whom had subclinical forms of the disease. During an epidemic the virus was isolated from 2 stillborn fetuses and from 11 infants dying soon after birth, of which 9 were premature. This was considered evidence of intrauterine infection.

Causes of death in the perinatal period were described by the few pathologists with whom we had contact as consisting largely of anoxia and pulmonary disturbances associated with prematurity although no figures were available. Birth injury, infections, malformation, and hyaline membrane are all infrequent. No special studies in the pathology of the perinatal period were being carried on as far as we could discover.

Chapter 8

Evaluation

Both the Russian and the American peoples are comparative (almost, one might say, competitively comparative) in their attitudes. It is seemingly not enough to know the medical situation in another country; that situation must always be compared with one's own situation. The question seems to be not "What are they doing?" but rather, "Is what they are doing better or worse than what we are doing?"

Before attempting such comparatives, three points should be stressed. First, comparisons involve opinions, whereas the delegation was primarily equipped to study, and was chiefly interested in, facts. Secondly, comparisons presume a standard of reference, and the delegation was composed largely of university-oriented individuals who would naturally lean on their personal background for a frame of reference. Perhaps the most valid suggestion—if evaluation is to be assayed—is that the delegation should make the corresponding intensive tour of the U.S. maternal and child health facilities. In the third place, and perhaps most importantly, the problems faced by the two countries—the U.S.S.R. and the United States—are so totally different that in many areas comparisons are meaningless. What each country is doing is right for the situation it faces and would be correspondingly wrong if transplanted to the circumstances and needs of the other country.

To a great extent any reader familiar with American medicine can form his own evaluations from the various facts recorded in the other chapters of this report. In many cases, our own evaluation of the situation is implied in the presentation of what was observed. It is the intent here only to summarize briefly the overall reactions which impressed the group, without attempting to repeat in detail each item of sustaining evidence.

In general, we could not help but be impressed by the priority given to maternal and child health in the Soviet Union. The medical concern and the effort directed toward this area indicates a recognition of the importance of the problems involved. Within the framework of this broad statement, one might comment specifically under three separate headings.

Personnel

We were impressed by the competence of the people we met in this field. In most instances this competence was remarkably appropriate for the assigned occupation. The educational system is strange to us and the system of promotion mysterious, but whatever the system is, it seems to bring top quality men and women to the appropriate levels of responsibility.

Not only is their competence in general impressive, but their dedication is above question. They are dedicated not only to their medical function, but also to the objectives of their system.

Research

Problems.—In general, the delegation was unfamiliar with and skeptical of research prescribed and directed by central authority. Viewed through this skepticism, it was felt that many of the problems being studied were not contemporarily oriented. Others (that is, organ transplant) are visionary and perhaps ahead of their times. The overtones of immediate applicability in the official directives may be responsible for keeping the basic physiologic and pathologic studies at a minimum.

Quality.—Almost all clinical studies showed a surprising lack of control data. The double-blind approach and an inherent skepticism concerning results were often lacking. Laboratory investigation is on a better plane comparably, and in several instances outstanding persons were encountered. The research equipment is apparently improving as compared with previous reports.

Medical Care

Organization.—The organization of maternal and child health is excellent for a planned econ-

omy. The objectives for increased numbers of physicians would seem optimal and possible of achievement. It was impossible by direct contact to evaluate the equality of medical candidates as affected by this increase in numbers. It was admitted, however, that the best of the young scientific minds were being urged towards physics and engineering.

The control which this form of society exercises over its citizens is well utilized with respect to the medical records. The birth certificate is pasted on the inside cover of the same record which will have the death certificate on the inside back cover. The home visits for the newborn, the sending of prematurely laboring women to specialized hospital units also represent medical advantages peculiar to the particular organization of their society.

Quality of Care.—The medical care provided mothers and children is much more uniform than in this country. While there are differences between the rural and the urban, between the teaching and the nonteaching hospitals, these differences are minor compared with the homogeneous aspect of the overall care. Not only the uniform record system, but also the management of specific disease entities by national edict produces this homogeneity.

Whether or not this care is of the same quality as the *average* care rendered mothers and newborns in the United States is difficult to assay. With the wide separation between the peaks and valleys of our medical care in the United States, between the large city hospital and the rural areas of *Georgia* or *Mississippi*, for example, it might well be questioned as to whether or not we know the average for the United States. It did seem apparent, however, that the level in quality of Russian care is improving rapidly.

Disease Entities.—There is no intent here list all the diseases from which the pregna woman or the newborn child suffers. Some co ments, however, should be made.

The evaluation of the Rh problem, in gener is good. However, the determination of bilirub levels is a "research procedure" under most oth circumstances and evident cases of mild to mo erate hyperbilirubinemia go undetected. Ma of the disease entities "not seen" (that is, cyst fibrosis and phenylketonuria) are the result poor observation of the newborn.

The statistical basis for the differences in pr maturity rates are discussed elsewhere. Maki the appropriate corrections, however, still leav a probable prematurity rate in the neighborho of 7 percent, which is considerably lower than t rate in the United States.

One might query the shift of responsibility f the damaged child from the medical profession educators. The move which took the child wi cerebral palsy (for example) from the aegis the Ministry of Health to the Ministry of Ed cation is unfamiliar to our contemporary thinki and perhaps not totally salutary.

The programs of health education for the pu lic were uniformly of a superior quality. T objectives, the effort and the teaching materials in the form of pamphlets, films, and prepared c courses for physicians—were all of good quali

In general, one could conclude that with mat nal and child health granted a very high priori much of the effort of the past 40 years has be spent establishing a basic pattern. There is doubt of the motivation of our Russian colleagu in this area, and there is every reason to beli that building on this pattern, they will continue advance in this field.

Chapter 9

Informal Suggestions for Subsequent Missions

A fulfillment of the objectives of the mission as well as the satisfaction of the usual desires while traveling in foreign countries can be facilitated by advance group planning and organization. The members of this mission were helped in this respect by other persons and agencies, but they also found it necessary to develop many ideas by themselves during the journey. As a result, it was felt that the transmission of some of these experiences in this brief presentation might make it easier for subsequent missions—especially with respect to those steps that are different from the ones usually considered for travel abroad and which may need to be arranged before leaving this country.

These suggestions are grouped into broad categories according to whether the actions are needed before departing, while en route, or while abroad.

BEFORE DEPARTURE

Language and Culture Problems

The composition of the team must include at least one person who is not only fluent in spoken Russian but who is at the same time extremely well versed in the technical aspects of the subject of the mission. The interpreter assigned by the U.S.S.R. authorities will undoubtedly speak English well but may not be acquainted with the scientific terms peculiar to the disciplines involved. Most U.S.S.R. scientists will not be encouraged to present their materials in English although they may speak the language. Hence, tremendous savings of time can be accomplished by avoiding the necessity of having long discussions on the meanings of words.

This Russian-speaking member must have two other assets. First, he must be knowledgeable in the culture and some of the history of the country. Although all members of the mission would do well to read some general books (e.g. Irving R. Levine, "Main Street, U.S.S.R.",[1] Life volume on Russia,[2] or John Gunther's "Inside Russia Today" [3]) and try to learn the alphabet, plus a few simple words, the Russian-speaking member will need to be aware of possible *faux pas* and other violations of Soviet practices and standards that differ from our own. Secondly, and more importantly, he must have infinite patience to tolerate all the demands upon his time and abilities.[4]

Planning Schedule and Itinerary

The development of an itinerary outlining which institutions the members would like to visit is most difficult to do in advance. Members usually are not sufficiently informed about Soviet research personnel and facilities to be able to plan this effectively until they actually see some of the institutions and organizational patterns. This conflicts with the desire of the U.S.S.R. authorities to have the schedule fixed and invariable after the first introduction and meeting. Therefore, any study of the institutions which can be made in advance and specified in the request will be a profitable investment.

A few general rules of procedure are worth suggesting about the itinerary if agreement from Soviet authorities can be obtained in advance. Permission to have the members of the mission organize themselves into two or three teams, according to disciplines or fields of interest, while visiting one institution will result in extending the amount and scope of observations. When members of this mission were allowed to do so and to spend more time with members of their own subspecialty, they found the device a most profitable one.

Secondly, prior permission should also be sought for members to spend time with specific

[1] Levine, Irving R., "Main Street, U.S.S.R.". Doubleday and Company, New York, 1959.

[2] Thayer, Charles W., "Life World Library, Russia," Time Incorporated, New York, 1960.

[3] Gunther, John, "Inside Russia Today." Harper and Bros., New York, 1958.

[4] The members of this mission wish to acknowledge the fact that they were fortunate in having a member who possessed all these qualities.

research or service workers on a longitudinal basis for one-half or a whole day. One cannot observe procedures and level of performance by a series of cross-sectional examinations consisting of visits for a few moments in one laboratory, nursery, or clinic after another. These brief and short-term probes not only interrupt many U.S.S.R. workers but deny the observers the opportunity to see *how* things are done. These quick inspections tell only *what* is being done.

Communications

It is well to warn family and friends that the delegation will be relatively incommunicado for long periods of time. Mail is the most dependable form of communication to notify correspondents about progress of the visit. Incoming mail is also satisfactory but it remains at the American Embassy in Moscow for the entire period while the mission is away from that city. Telegrams, either personal or official ones, sent through the American Embassy, are not to be relied upon. Unfortunately, as was the case in our mission, the most important one about safe arrival may be the one never sent or received. Telephone seems to be out of the question, although the long-distance operator will accept orders for calls to the United States.

Exchange of Gifts

The U.S.S.R. personnel will bestow small gifts, souvenirs, and other tokens of remembrance upon members of the mission. Female members of the mission will be presented with flowers at arrival and departure. These acts of hospitality are especially noted in cities away from Moscow. It is extremely important that the chairman be prepared with a collection of similar items for return as well as each member having his own assortment. The items under favor will vary with time, but among such presents likely to remain welcome are musical records, picture postcards, commemorative U.S. postage stamps, lapel buttons and ornaments, and mints and small candies. The Soviet people are also anxious to see pictures of American people, homes, landscape, scenes, and daily life.

Cameras

Members should be encouraged to take cameras with ample supplies of film. The Soviet scientists were not only willing to be photographed but indeed were flattered by requests to pose. The same freedom appeared to prevail regarding the photographing of health facilities and equipment. Restrictions about taking pictures of places with military or defense implications are, of course, to be expected.

The Soviet people and officials also frown upon the taking of pictures of buildings and scenes in a blighted area that might be interpreted in a derogatory sense. What may appear to the American visitor as an item of local charm and color may be misunderstood by the Soviet people. Obtaining permission to photograph such items is desirable but seeking permission does not assure acceptance of the idea.

EN ROUTE

Fiscal Arrangements

Once the team leaves the country, it is recommended that members designate one as treasurer for the disbursement of funds for official travel and other expenses. Each person must keep an account of his own conversion of dollars and travelers checks into U.S.S.R. currency. As needed, however, the treasurer should receive Russian money from each member for travel in taxis, buses, subways, trains, planes, meals, sightseeing, and entertainment as a group. If each member tries to settle his own bill for these expenditures it will waste time, cause confusion, and make each person responsible for his own expense voucher. The treasurer can do the latter for the group as part of his responsibility. Inasmuch as the chairman and the Russian-speaking member of the team have other responsibilities, it is well for a different person to serve as treasurer.

ON ARRIVAL

American Embassy

All members should register at the offices of the Embassy in Moscow. In the event of an emergency, it is well to know its telephone number since directories are not available.

Official Librarian

The institutions visited will be anxious to distribute literature, reports, and other materials to the members of the mission. At times, there will be individual copies for each mem-

times, only one copy for the mission. In addition, the members of the mission may request sample copies of forms and reports. It is well to designate one person on the team to be responsible for the official set and to record where it was received and how used. These will accumulate quickly and the best advice is to mail the bulky ones to the United States by the Soviet equivalent of parcel post. It is remarkably inexpensive and all packages from this mission arrived intact. Moreover, in each hotel there is a post office which will wrap the package and provide all necessary mailing materials at no expense.

A second function of the librarian, or the Russian-speaking member of the delegation, should be to collect the tables of organization for each institution with names of key professional persons. At the time of introduction, the names will be difficult to understand and spell. Most institutions have charts with the table of organization drawn in some detail, and it is well to request copies of these before leaving or to sketch one and ask the person in charge to check the names.

Sightseeing and Entertainment

There will be time for sightseeing, entertainment, and shopping. If the members have similar tastes, it is well to appoint one member to work with the Russian-speaking member of the mission in scheduling this, as well as arranging for the bookings and reservations. When the mission is away from Moscow, particularly in the southern parts of U.S.S.R., the hosts will probably plan and carry out all entertainment and sightseeing activities as well as leaving free time for shopping or individual sightseeing. In Moscow and Leningrad, however, it is important to decide early upon the opera, ballet, theater, and circus, and to make reservations well in advance. The Russian interpreter-guide should be utilized fully in these negotiations because of knowledge of local customs and practices with regard to scheduling and reservations.

Plans for Final Report

Before the delegation disbands, plans and assignments should be made for the final report to the sponsoring agency. This is best discussed while still abroad in the event questions arise or additional information is desired.

Summary

The general rules for travel abroad apply as well as the ones given throughout the sections. In addition, a good travel guidebook[5] will be invaluable.

The mission will likely receive a briefing from various members of the State Department and other governmental agencies. These will be helpful but, in some instances, the recommendations will be unrealistic or omit important points that should be stressed. The best advice to a prospective mission is to be absolutely certain that one or two members from the most recently returned mission are invited to a planning session before embarkation.

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[5] Levine, Irving R., "Travel Guide to Russia." Doubleday and Company, New York, 1960.

Chapter 10

N. A. Semashko Institute of Public Health for Organization and History of Medicine, Ministry of Public Health of the U.S.S.R., Moscow [1]

This Institute was organized in 1944 under the Academy of Medical Sciences. Its director, Professor Shevelov, previously had served as the Institute's deputy director until 1959. Structure of the Institute and structure of the organization of public health in the U.S.S.R. are shown in charts accompanying this chapter.

Widespread Medical Services

In the U.S.S.R., medical care is the responsibility of the state, and medical services must be provided free of charge to the entire population.

In 1959, the U.S.S.R. spent:

For Medical Services and Research—45 billion rubles (4.5 billion dollars).

For Social Insurance (part-time compensation for illness)—68 billion rubles.

For Social Security (old-age pensions for chronic illness and incapacity)—64 billion rubles.

There are now 381,000 physicians in the Soviet Union—a ratio of 18 per 10,000 population, compared to a ratio of 13.2 per 10,000 in the United States. In 1913, there were 23,000 physicians in Russia; now that nation is graduating 20,000 a year. (The 1960 *Britannica Book of the Year* reveals that in 1959, there were approximately 230,000 physicians in the United States and that 4-year medical schools were graduating 6,861 yearly. It is estimated that the U.S. population will reach 235 million by 1975, and to maintain the present ratio of 13.2 per 10,000, a total of 310,000 practicing physicians will be required. To reach this goal, the number graduated yearly from medical schools must reach 10,400 by 1975.)

The 381,000 physicians in the Soviet Union are graduates of the 6-year medical training program. Of these—

55,000 are physician-pediatricians;
27,000 are obstetricians-gynecologists;
92,000 are internists;
38,000 are surgeons;
10,000 are neurologists;
16,000 are tuberculosis physicians.

In addition, there are 300,000 feldschers with 4 years of medical training, 200,000 midwives with 3 years of medical training, and 800,000 nurses with from 3 to 4 years of medical training.

Prophylaxis Emphasized

Soviet medicine emphasizes prophylaxis. This, of course, includes the prevention and treatment of disease but in addition stresses social conditions that resist disease. The law plays an important role. For instance, the working day in 1960 is limited to 7 hours, and for those in heavy industry, such as mining, the day is 6 hours.

Housing and Food

The shortage of dwelling houses is recognized as a problem, and the U.S.S.R. is building new homes at a rate about 1½ times as fast as any other country. The quality of food is important to health, and the Soviet Union now has almost twice as much nutritionally valuable food as in Czarist times.

Dispensaries Provided

The government has provided dispensaries f the population for care in sickness and in healt These include clinics for pregnant women a children. Each year several million healt people receive prophylactic examinatio Workers laboring under bad conditions are e amined more frequently.

[1] Visited October 17, 1960.

Practice Based on Theory

In Soviet research work, theory and practice are always considered together and must complement one another. It is claimed that every practical task in the care of patients must be based on theory. The new method of care is put to experimental use in many hospitals. If it stands up better than old methods, then it is adopted by the Government and is put into practice throughout the entire country.

Population Active in Health Matters

The population takes an active part in all health activities. Each republic has its own department of public health, and each has a permanent commission on welfare comprised of deputies and workers. Each hospital has an advisory commission on which the people are represented. The same is true of all medical setups in schools or factories, and these serve as forums in which the people take an active part in welfare.

July 11 each year is a day of special significance in health matters. On this day in 1918, Lenin proclaimed a health and welfare program and established the first Ministry of Health. The yearly celebration cites the accomplishments of the preceeding year, and future plans discussed.

Chapter 11

Central Research Institute of Obstetrics and Gynecology, Moscow [1]

Institute's Main Functions

In addition to its research activities, some of which are described later in this chapter, the Central Research Institute of Obstetrics and Gynecology—

- Provides obstetric and gynecologic care for patients.
- Provides and applies prophylactic methods.
- Conducts studies on methodological organization for Ministries of Health of both the U.S.S.R. and the R.F.S.S.R.
- Undertakes postgraduate teaching.

The Institute, which delivers approximately 2,000 patients a year, cares for the women of one city district and pathologic cases referred from other consultations.

Outpatient Consultation Clinics

The Institute has outpatient clinics for pregnant women and for women with gynecological problems. In normal pregnancies, women receive an average of six or seven prenatal examinations. These women's consultation clinics are responsible for the teaching of psychoprophylaxis in 6 sessions, from the 32d through the 38th week of gestation. Another important function of the clinics, which are open from 8 a.m. to 9 p.m., is the early diagnosis and hospitalization of pathologic pregnancy, toxemia, abnormal presentation, heart and pulmonary disease, contracted pelvis, threatened premature labor, bleeding, and other disorders. The objective of a cancer-detection program is to have all women examined cytologically twice a year from the age of 18. Laboratories at the Institute are set-up for bacteriology, histopathology, endocrinology, biochemistry, and physiology.

[1] Visited October 17 and 20, 1960.

Division of Wards

The Institute has a ward for the treatment of afebrile complicated pregnancy, a ward for normal pregnancy, and an isolation ward and separate labor, delivery, and nursery rooms for patients admitted in labor with a fever above 37.5 degrees Centigrade (99.5 degrees Fahrenheit). For normal pregnancies, there are two identical labor wards, two identical delivery wards, and two identical nursery suites that are alternated every 10 days. There also is a premature nursery and a gynecology department which has medical, surgical, and carcinoma wards.

Preparation of Breasts for Nursing

Much attention is paid in the prenatal clinic to the preparation of breasts for nursing. Procedures such as brushing the nipples and air baths are used. The incidence of mastitis is reported as being very low.

Professors Vigodchikov and Voskresensky are conducting an experiment in this institute and in Leningrad in an effort to control staphlococcus infection through the prophylactic administration of staphlococcus antitoxin. The preliminary results are said to be favorable. Every effort is made to have the mother nurse her infant, but if this should be impossible or the supply insufficient, other mothers give their excess milk for general use. There were said to have been 30,000 women pumped and 25 tons of milk collected since the hospital opened.

Delivery Rooms and Methods

There were eight women in various stages of labor at the time of the delegation's visit. None had received medication, and some were obviously having contractions, but not a sound passed their lips. Each delivery room had four tables and one scrub sink. A midwife was in immediate charge

of each patient, and an obstetrician in attendance was to be called only if a complication, such as fetal distress, should arise or there should be need for manipulation or a forceps delivery. The staff wore white gowns over street clothes and thin two-layer gauze masks—many resting below the nose.

A small delivery room was available for forceps deliveries and a big well-equipped operating room and scrub room for Cesarean sections. The incidence of Cesarean sections in this Institute was said to be 3.6 percent (in contrast to 1 percent for the U.S.S.R.).

All women were given oxygen if the membranes were ruptured or if there were abnormality of the fetal heart. All women received oxygen throughout the second stage of labor. A number of oxygen filled pillows were in evidence. At delivery the cord is not cut until pulsations stop. No vitamin K is ever given the mother or infant.

Resuscitation Measures

Conventional resuscitation measures were used when necessary. An ingenious foot-pressure suction device had been invented to aspirate the infant. In asphyxia, spirits of ammonia was used together with oxygen. And for severe asphyxia, a sterile intubation set was always available for suction and oxygen administration.

The newborn usually is observed in the delivery suite for approximately 2 hours. He is wrapped in sterile clothes and placed on a warm table. A pediatrician is available and takes over the infant's care at birth.

All women are said to be Rh-typed and titres are obtained when indicated. The Institute had blood, furnished by a central bank, for exchange transfusions. Every effort was made to have fresh blood, and blood was never used after it became 5 days old.

Department for Newborns

The department for newborn infants had 100 beds available and was divided into two parts. The larger section was for healthy infants, with separate wards for the premature and for those with congenital malformations, the second section was for the infants delivered of mothers with fevers.

In every instance, the mother stays in the ho pital as long as her infant in order to breast fe the child and assist in its care. This was tr even for the small premature infants. The no mal infants went to breast 6 times a day, a even the smallest premature infants, if they cou suck, went to breast every 2 hours. Normal i fants stay in the hospital 8 days and go home the ninth day. Under normal conditions, t mothers are ambulatory on the second or third d after delivery.

Difference in Definition

The delegation encountered a confused situ tion when it inquired into the incidence and de nition of prematurity. In general, the weight 2,500 grams and under is used, but this is a coupled with a length of 45 cm. The impressi was received that in instances when a ba weighed less than 2,500 grams but was over 45 c in length, it would not be classed as a prematu If a baby of 1,000 grams or less at birth died the first week after birth, this infant was called fetal death. No reporting or recording of a fetal death is required in the U.S.S.R.

Another difficulty in understanding the mea ing of U.S.S.R. statistics is that a differe definition of a live birth is used from that re ommended by the World Health Organizati and generally used throughout the rest of t civilized world. The only criteria for a live bir in the U.S.S.R. is a breath that puts air in t lungs. A baby's heart can be beating for a co siderable period—he can make any amount muscular movement—but if he does not breat his death is considered a fetal death.

Still another problem in comparing the mo tality and incidence figures from this institu with those in our country, for instance, is t result of an excellent program that operates Moscow and in theory throughout the U.S.S.R. a program we might consider very seriousl Rather than establish centers for premature i fant care and have infants transported to the ce ters after birth, Moscow has a different syste

One maternity hospital, in this case, Materni Hospital 13, is especially equipped and staffed manage not only premature labor but all cases suspected Rh incompatibility. If any lab starts prematurely, say at 7 months, the call f

an ambulance goes to the central exchange at the Health Center and a car, with a midwife and a nurse, is immediately dispatched and the patient transported to Maternity Hospital 13. This then must materially alter the type of patient admitted to this institute for instance and may account for its low incidence of prematurity.

It so happened that the services of Maternity 13 interested the delegation so much that every effort was made to visit it. Unfortunately, this hospital had just been closed because of an outbreak of infection. At our return visit to the Institute on October 20, preparations were being made for it to receive the patients who would otherwise go to "13" until the emergency passed.

In any event, we were told that the incidence of prematurity in the Institute was from 2 to 3 percent (in contrast to the incidence of prematurity of 4.8 percent for the entire U.S.S.R.).

Treatment for Infants With High Bilirubin

Neither premature nor full-term infants with a high bilirubin but with no Rh incompatibility are given an exchange transfusion. These infants instead are given 40 mgs. of Pyralidon N or Pereston N to lower the bilirubin. The Institute has seen only one case with kernicterus after a non-hemolytic, non-Rh-problem infant. Since 1955, 300 cases of Rh incompatibility have been seen but only 3 severe ABO incompatibilities (1 of the 3 was exchanged). ABO incompatibility is very rare.

In the management of Rh disease—if the Coombs test is positive, the bilirubin in cord blood below 3½-mgs. percent and hemoglobin is below 90 percent—30 cc of Rh negative Type O blood is given at once in the umbilical vein. If bilirubin is over 3½-mgs. percent, an exchange transfusion is given as soon as possible. The hyaline membrane syndrome is said to be very rare.

The Premature Nursery

At the time of the visit there were only two infants in the premature nursery. The premature nursery is no different from the cubicled wards for the normal newborn. Premature infants are not kept in incubators but in a specially constructed and quite effective heated crib called a "cuveuse".

Dr. Lebedinskaya, in charge of the premature unit, was puzzled by one infant there. This infant had been born at 6 months weighing 1,700 grams but with a length of 45 cm. The length and weight did not correspond, the weight being lower than would be expected for the length. The doctor concluded that since the mother had toxemia, the infant's malnutrition was probably due to the maternal renal disease.

The delegation was told that the feeding of premature infants had been studied throughout the Soviet Union, and that the majority of specialists agreed that prematures should be fed only 6 or 7 times a day, as the act of feeding was a strain. The general policy is to put the premature to breast—regardless of its birth weight—if he is vigorous enough to suck. If the infant is too weak or injured to suck and swallow, it is fed by dropper or gavage until it can go to the breast.

Medical Sisters

The equivalent to the American nurse is called a medical sister, and assisting her is a ward aide. The personnel works in four shifts of 6 hours each. There is a ratio of one medical sister or ward aide to 3.5 mothers and one to every 2 infants. Premature infants are cared for by the medical sisters in the ratio of one to one. The delegation was impressed with the abundance of personnel.

Afebrile Complications

The Institute has a 45-bed department under Professor Lubimova for the treatment of afebrile complications of pregnancy. This section has cared for 20 pregnant women who had had major cardiac surgery without a fatality. Pregnant women with a systolic pressure of 135 to 140 are hospitalized and given the well recognized toxemia regimen. In the past 8 years no patient has developed eclampsia. In this same period, 88 patients with diabetes have been treated and delivered. Delivery in these cases is by Cesarean section about 3 weeks prior to term.

Research Activities of the Institute

The director presented some of the research activities of the Institute:

1. Methodological organization of obstetric and gynecologic procedures for application to the care of patients in women's consultation clinics

throughout the entire U.S.S.R. The purpose is to achieve a method of management that will satisfy the basic requirement in adequate obstetric and gynecologic care. The Institute has a physiological laboratory for pregnant women in which it is conducting experiments and research on the psychoprophylactic preparation for delivery without pain.

2. Prematurity. The adaptation of women in pregnancy and its effect on the development of the fetus. These studies were said to be based on the findings in pregnant animals on the development of the brain.

3. Physiology and pathology of the newborn infant, including the development of the embryo and the influence of the course of labor. The function of embryogenesis is studied in a special research laboratory of embryogenesis. Here studies on the fetal and newborn animals are conducted. Equipment is available for recording electroencephalogram and respiratory movements. Biochemical and morphological experiments are conducted. The laboratory is interested in the role of the reticular formations of the brain stem, in the development of the brain and in the development of conditioned reflexes. A 20-channel EEG is used to study normal and pathologic conditions in the newborn. Function is studied under a variety of conditions—sleeping, waking, suckling, visual and respiratory stimulation, peripheral movement, and startling.

Dr. Farber is conducting a comparative study on normal and abnormal newborn infants using an electrophysical approach. The respiration, suckling and grasp are mechanically recorded and correlated with the EEG. Suckling was found to suppress the grasp and cause a pause in diaphragmatic and abdominal respiration. After suckling is stopped, there continues some suppression of breathing and for a time only thoracic respiration is observed.

Dr. Farber said there was interest in the structures that support function. The reflex pathway for the grasp is by afferent nerves to the motor cortex. The Institute now believes in a dual spinal column pathway—one to cortex but also one to the reticular formation in the brain stem. Similarly with the suck, the reflex path is by a branch of the facial nerve to the ganglions in the central nervous system.

In studying cortical development, the scientists believe they can detect localized disturbances in specific types of birth injury in response to the states of being awake, of light sleep and of deep sleep. They have been establishing norms for the newborn at various hours of age. The disturbance in reticular formation in the first hours after birth are most evident in the waking EEG. For instance, in a case with forceps delivery and intracranial hemorrhage, the waking EEG showed disturbances in the right parietal and frontal leads.

Elena Novikova has studied and published observations on the electrocardiographic findings in premature infants during their first 3 months of life.

All of the workers in the newborn department had completed the 3-year aspirantura training or were candidates for the doctor of medical science degree. All are engaged for part of their time in scientific investigations in some special field.

Dr. Denisova is conducting research on problems associated with hemolytic disease. Since 1955, there have been 300 cases with Rhesus incompatibility but only 3 severe ABO incompatibilities, 1 of which received an exchange transfusion. Very few ABO incompatibilities have been encountered.

Part of Dr. Denisova's research program is to develop a methodology for the treatment of erythroblastosis. All pregnant women in Moscow have Rh determinations prenatally. If negative, the husband's Rh is determined. If the husband is positive, the women's consultation clinic maintains a special watch over the pregnancy (this is true for both the first and subsequent pregnancies). If previous pregnancies have resulted in abortion or other complications or if there is a past history of hemolytic disease, an effort is made to concentrate all such patients in a hospital clinic specializing in this condition and in premature labor. In Moscow this is Maternity Hospital 13, but in spite of this general policy, many of these patients are concentrated in the Department of Pathology of Pregnancy of the Institute of Obstetrics and Gynecology. The titre is obtained several times, and if it is found rising rapidly labor is induced at 33 weeks before term but not earlier. Emergency admissions of patients not previously followed at this hospital also occur.

4. Endocrine problems. Dysfunctional bleeding. Sterility. Menopausal hypomenorrhea.

The Institute has a well-equipped laboratory for the chromatographic determination of steroids and estrogens.

Staff of Central Research Institute of Obstetrics and Gynecology of the Ministry of Health, U.S.S.R., Moscow

Acting Director: Dr. Bartels, R.F.S.S.R.
Director of Obstetrics: Dr. Raisa Kolganova.
Director of Pediatrics: Dr. D. Stepanov.
Director of Endocrinology: Dr. Krater.
Assistant Director of Therapeutics (Internal Medicine): Dr. Turbayeva.
Secretary of Institute: Dr. Zaylank.
Physiologist: Kiva Shuleykina, Ph. D.
Obstetrician: Dr. Valentina Aristova.
Chief of Pediatric Newborn Department: Dr. Elena Novikova.
Pediatrician: Dr. Lydia Denisova.
Premature Department: Dr. Lebedinskaya.

Chapter 12

Maternity Hospital No. 25 of Moscow City Department of Health [1]

Administrative Structure

This hospital serves not only as a base hospital for training doctors from the Second Moscow Medical Institute but also provides service for mothers and children in this particular district of Moscow.

In Moscow, there are more than 80,000 live births every year, and the city's facilities for handling these births include 4,000 maternity beds in 30 maternity hospitals,[2] 6 of which are comparable to the presently discussed Maternity Hospital No. 25.

Number 25 serves a district of approximately 60,000 women who are 15 years of age [3] and older. The district is one of 23 in Moscow, each of which has from 175,000 to 200,000 persons living in it. This particular district is divided into seven parts, each portion having assigned to it its own doctor. The maternity hospital provides its own consultation clinic, psychophrophylactic lessons, and has a complete service including radiology.

3,510 Infants Delivered in 1959

In 1959, this hospital delivered 3,459 women of 3,510 infants. There were 68 Caesarean sections (2 percent); 8 neonatal deaths (2.3 per 1,000 live births); 3 stillbirths (0.8 per 1,000 deliveries); no maternal deaths and 12 premature infants (0.34 percent). In addition, 134 gynecologic operations were performed.

Hospital's Use of Forms

During the antenatal care, the mother's record is kept by the maternity consultation clinic on a form (Form 111). At the 32d week of pregnancy, when the expectant mother receives a maternity holiday from her place of work, an exchange card (Form 113) is filled out in three parts by the maternity consultation clinic. The woman carries with her the left-hand portion, the middle portion is given to the hospital where she is scheduled to be delivered, and the right-hand portion is for recording the results of her post-partum examination. The hospital keeps its own record on the delivery on Form 96, and data on the child is put on Form 97, which is given to the mother so she may have a record. If the child dies, this form is filed with Form 96.

Premature Deliveries Taken Elsewhere

When a woman starts in labor she telephones the district's central office, and an ambulance is dispatched with a doctor and a midwife to transport the patient to the hospital. If the labor is premature, she is not taken to No. 25 but to Maternity Hospital 13, where all premature deliveries are concentrated from Moscow. (Maternity 13 also receives all deliveries with Rh incompatibility.) In 1959, Maternity 25 had only one case of erythroblastosis requiring an exchange transfusion. This excellent system helps to explain its low incidence of prematures and erythroblastosis and the low mortality rates.

Beds for Afebrile Patients

Maternity Hospital No. 25 has a department for afebrile patients with 120 beds for normal pregnancy, 30 for complicated pregnancy, 50 for gynecologic problems, and 120 cribs for infants. There is an entirely separate department, with 30 beds, for patients admitted with a fever. This latter section has its own delivery room, operating suite, and wards. Although there is no pathology department in the hospital, every effort is made to obtain autopsy examinations. There are five children's hospitals that do the post mortem ex-

[1] Visited October 18, 1960.

[2] Additional facilities in Moscow for mothers and children include two medical institutes, three obstetric and gynecological institutes, one central institute of postgraduate studies, and other general hospitals.

[3] In another maternity home, the delegation was told that since girls cannot marry until 18 years of age, there are practically no births from mothers under that age.

aminations for the entire city. No. 25 uses the services of the nearby Rusakov Children's Hospital pathology department.

Tour of Hospital

The delegation was taken on a tour of the hospital and was impressed with its cleanliness and attractiveness. On admission, the patient in labor is received in a consultation clinic; if afebrile, she is admitted to the normal division; if febrile, to the pathologic division. In the preliminary examining room, she is registered, weighed, has her pelvic measurements checked, and undergoes routine examination. She then is given a shower, is shaved, is put on a cart, and is taken to the labor room. There are four labor rooms each with three beds, and there are two delivery rooms each with five tables. (Ten deliveries had taken place the preceding night.) The delivery rooms are used alternately and cleaned between times. Six women were seen in various stages of labor. No one had received any medication, and the delegation was told it was "not needed." The labor room was silent and there was no outward evidence that any of the patients were in pain.

Treatment of Newborns

The infants' eyes are treated with 2-percent silver nitrate, the cords are cut, and a metal clamp is applied after pulsations cease. The cord is treated with 5-percent fresh potassium permanganate, but no bandage is applied. The delegation was told 90 percent of the cords fell off by the third day. However, most of the infants seen in the ward subsequently still had cords attached on the fifth or sixth day. The innocent question as to circumcision caused consternation and much amusement. We were told no one wants it and that the people had been persuaded there was no need for circumcision.

At birth, the infants are washed, and the tubs are then sterilized with alcohol and another disinfectant. The skin is oiled with sterile fish oil or vaseline, and weak iodine is applied to the skin folds. An identifying wristband is applied and the infant firmly wrapped in swaddling clothes, with the arms bound and the legs straight. After 3 days, the arms are not bound.

Post-Delivery Wards

The post-delivery wards, which are large, clean and attractive, contain nine beds each. Mothers are allowed up in the third or fourth post-delivery day and have an attractive, large exercise room. Although they are permitted no visitors, at specific times their husbands are informed concerning their progress and that of the infant. Only women delivered the same day are admitted to the same ward, and all are discharged on the same day. The ward is then cleaned and sterilized.

Infants are kept in seven nurseries, one for each day's deliveries. When diapers are changed, the infants' buttocks are cleaned by being held under a tap of running water. Babies go to breas after 12 hours and then are fed 6 times a day Mothers and infants who stay beyond the time fo group discharge are transferred to another section If the baby stays, the mother without other chi dren also stays even though the infant is prem ture and must stay several months. If there a other children at home, the mother may go hon but returns to the hospital for nursing and care for the infant herself during the day.

An attempt to obtain a photograph of an infa being dressed was unsuccessful as the delegati was told this could not be done without fi getting the mother's permission. Permission w given, however, to take a general view of t nursery. In the department for complicat pregnancy, there were 30 beds. The delegatio encountered 7 sixth-year medical students study ing these cases.

Out-Patient Department

The hospital has a large outpatient departmen where the women's consultation clinics are held There were consultation rooms for the distric obstetrician where the pregnant woman receive her course in psychoprophylaxis. An exhibit o contraceptive devices is prominently displayed There was a small gymnasium with a "Swedish wall", in which the prophylactic exercises ar given. All women have routine chest X-rays Wasserman tests, A.B.O., and Rh blood-typing and pelvic X-rays if indicated.

The women's consultation clinic hours are from 9 a.m. to 2 p.m. and from 3 p.m. to 8 p.m. Ob-

stetricians covering the clinic work approximately 6 hours a day, 6 days a week, and each will see from 10 to 20 patients daily. Dental and other special consultations are available in the clinic. The doctor is responsible for the care of the women from his own part of the district. This includes the giving of the psychoprophylactic lessons. Two days a month an obstetrician is assigned to the delivery floor, and following this he is given a free day.

Mothers are followed postpartum every 6 months either in the women's clinic of their part of the district or in a clinic attached to the business in which they are employed. Cervical smear and culpascope examinations are a routine in the cancer prevention program.

The hospital has a special ward of 23 beds for sick infants. If an infant develops an infectious disease, he is transferred to a children's hospital.

Staff of Maternity Hospital No. 25 of Moscow City Department of Health

Director: Dr. Setnikova.

Assistant Director and Head of Children's Department: Dr. Obienskaya.

Academicians: Professors Lebidov and Alexandrovich, Second Moscow Medical Institute.

Director of Pediatrics: Dr. Turina.

Director of Pathological Department: Dr. Ivanovna and Dr. Karmelitsina.

Director of Gynecology Department: Dr. Ochinikova.

Chapter 13

Children's Polyclinic No. 32, City of Moscow Department of Health, Moscow [1]

Administrative Structure

A children's polyclinic in the U.S.S.R. serves children up to 15 years of age. Polyclinic No. 32 is responsible for the 15,000 children residing in one area of Moscow plus all children (regardless of residence) who may be in attendance at a children's institution located in this part of the city. Thus, there are 4 nurseries, 12 kindergartens, 2 boarding schools, and 9 schools that come under the surveillance of this clinic, which is under the direction of Dr. Kokyeva. Each is assigned a special doctor and nurse. The district is divided into 20 residential areas and each has a doctor and nurse team. Thus, a doctor is responsible for about 750–800 children.

Polyclinic No. 32 has a staff of 65 doctors, 117 nurses, several dentists, and auxiliary personnel. The budget is 2,080,000 rubles a year. The clinic attempts to provide preventive medicine, physical checkups, consultation, and treatment when necessary. There are about 500 patient-visits a day at the clinic. Sick children are not received at the clinic but are treated at home. Thus, the parent of a sick child notifies the clinic or the doctor responsible for the child. The doctor sees the child at home and treatment is prescribed, including hospitalization when necessary. If hospitalized, the polyclinic is notified by the hospital when the child has been discharged. The information from school and home visits, as well as hospitalization episodes, are summarized on the child's record in the clinic.

Operations and Observations

The children's polyclinic is notified by the maternity consultation clinic that a pregnant woman from its district has registered for antenatal care. The public health nurse from the children's clinic visits her at home and starts instruction on feeding and the care of children, including supplies needed and bathing. After the child has been born, the children's clinic is notified by the hospital when the child is to be discharged. A pediatrician and nurse visit the child at home a day or two after discharge from the hospital. This first home visit to the child is never more than 3 days after discharge.

About 2 weeks later, the mother starts bringing the child to the polyclinic and subsequent visits continue once every month throughout the first year of life. If the mother delays in bringing the child to the clinic, the doctor and nurse will visit the home and "instruct" the mother to bring the child more regularly. In this connection, the clinic attempts to keep the personnel assignments steady so that the doctor and nurse look after the same children over a period of time. During the second year of life, the child visits the clinic 4 times a year.

Child's Records Kept

Records are filed in record room near clinic entrance. Each of the 20 residential areas has a special color on the outside of the record folder, and records are filed by streets within each 1 of these 20 sections. The child's record is personally carried by the records clerk to the particular station in the clinic where the child will be in attendance.

When the child moves to another district (there are 09 such polyclinics in the city of Moscow), his record is transferred to the new area. When he becomes 15 years of age, the record is transferred to the adult clinic.

The director of Polyclinic No. 32 is Dr. Kokyeva.

[1] Visited October 18, 1960.

Chapter 14

Rusakov Specialized Children's Hospital, City of Moscow Department of Health, Moscow [1]

Function of Hospital

The Rusakov Specialized Children's Hospital, a large, old structure with 1,035 beds, receives difficult cases of patients from birth through 14 years of age from the entire U.S.S.R. The hospital is chiefly concerned with surgical problems, and each department has its own chief and its own laboratories. An average of 3,000 operations are performed each year at the hospital, which is an important center for postgraduate training in pediatric surgery. Three hundred beds are set aside for surgery patients.

The original purpose of the hospital was to care for cases with contagious diseases. Still among major problems are respiratory infections, pneumonia and influenza, but scarlet fever, diphtheria, and dysentery have largely disappeared.

Dr. V. Alexander Kruzhkov, director of the City of Moscow Specialized Hospital, the Rusakov Children's Hospital, and Professor S. Y. Doletsky, specialist in children's surgery.

Individual Isolation System

An excellent system for individual isolation—that starts with the patient's arrival by ambulance—is in operation although many of the individual isolation pavilions scattered throughout the grounds were empty. The delegation saw two infants with severe pneumonia who had been admitted the same day and had been placed in a small isolation cubicle. They were being treated with antibiotics. If one patient is discharged before the other, the remaining convalescent patient is transferred from the cubicle to a ward.

Professor Doletzky Impressive

The delegation was impressed with Professor Doletzky, a young man with an intimate knowledge of pediatric surgery and the work of surgeons in the United States. He has had large experience with thoracic surgery, especially tumors of the mediastinum, and has published his experience in repairing 160 diaphragmatic hernias. The delegation saw excellent harelip repairs and a number of postoperative cases of duodenal and anal atresias, empyema and intussusception. All appeared to be receiving careful postoperative supportive therapy of fluids and oxygen when needed. The hospital had not attempted cardiac surgery, but Professor Doletzky recently attended a conference on this subject in Mexico City and had plans for beginning this type of operation. He presented us with articles and books he had written on pediatric surgery.

Fresh Air Therapy

The wards contained eight beds and seemed quite crowded. Reminiscent of 25 years ago in the United States, great emphasis is placed on fresh air therapy in pneumonia and respiratory disease. Many children, bundled in great blue sleeping bags, were on a porch receiving fresh-air treatment. The delegation saw a number of mothers in white gowns over street clothes sitting beside or holding their very ill children.

The Pathology Department is located in a pavilion of its own. Autopsies are performed on their

[1] Visited October 10, 1960.

own patients and those from five other children's hospitals—230 to 240 a year. The delegation was shown some beautifully stained and mounted whole brain sections. Apparently no autopsies are performed on deaths at home, but traumatic deaths are all autopsied in two centers of Medical Jurisprudence in Moscow. The delegation was told that the hospital almost always obtains permission to perform an autopsy, but permission is not required.

The Pathology Department has a staff of five pathologists who perform the post mortem and microscopic examinations. There is no strict specialization. In addition, each pathologist has his own laboratory, and each is pursuing independent research. Toxoplasmosis, cytomegalic anemia, candida albicans and other infections are being studied.

Dynamic Dr. Kruzhkov

A word must be said about the very interesting director Dr. V. A. Kruzhkov. He is a vigorous, dynamic, effervescent, young 77 years old. With great feeling, he pointed out the operating room in which he started his surgical career. His office was the only one seen in the Soviet Union that did not have the picture of a political figure on the wall—instead there was a painting of beautiful flowers. The delegation was told that he had a very large consultation practice, because he is a very skilled diagnostician. This latter point is of interest since, in spite of repeated questions, at no other point in our travels did anyone admit that there was such a thing as private practice in the present day Soviet Union. In fact, the denial was usually very vehement, and we were left with the impression that if it occurs, it is much frowned upon. John Gunther in one of his books has a footnote stating that private practice still exists.

Staff of Rusakov Specialized Children's Hospital, City of Moscow Department of Health, Moscow

Director: Dr. Alexei Kruzhkov.
Head Physician: Dr. Shapiro.
Head of Surgery: Professor Doletsky.
Head of Infant Section: Dr. Dikya.

Chapter 15

Institute of Pediatrics of the Academy of Medical Science, Moscow [1]

History of the Institute

Director Olga Sokoleva-Ponomareva welcomed us graciously before beginning a discussion of the Institute.

The building in which the Institute is currently housed was 200 years old in 1959. The Institute of Pediatrics was founded in the time of the Czars because of the very high infant mortality. After the 1917 Revolution, this building was reconstructed and made the Institute of Maternal and Child Welfare, which carried on scientific research and training programs in the pediatric field. In recognition, some members of the Institute were awarded Red Labor Medals.

In 1945 this organization became the Institute of Pediatrics of the Academy of Medical Science. The Academy occupies a key position in medical research, and understanding its operation is essential to understanding medical research in the Soviet Union.

The Academy of Medical Sciences must not be confused with the Academy of Sciences of the U.S.S.R. The latter was created by Peter the Great in 1724 and concentrated more on biological sciences than on medicine. The Institute of Experimental Medicine was founded in 1890 and devoted itself to problems of theoretical medical research. Under the Czars, Russian medicine was cosmopolitan and objective and was free in regard to scientific methodology. After the Revolution in 1917, one basic principle went into effect: science cannot and must not be divorced from politics. This principle ruled the Academy of Sciences: "the fundamental question is with what kind of politics science is connected and whose interest is served—the interests of the people or the interests of the exploiters." The Soviet Government regarded science, if based on materialistic principle, as an aid to achieve its far-reaching political goal and gave it much encouragement and support. The contact between Russian medicine and the West during World War II (The Great Patriotic War to the Soviet) revealed grave deficiencies and the need for accelerated research to provide more and better drugs, equipment and medical technology. Out of this grew the expansion of the old Institute of Experimental Medicine, later the All-Union Institute of Experimental Medicine, into the Academy of Medical Sciences in 1944, directly subordinate to the Ministry of Health, U.S.S.R.

All medical service, in common with other aspects of life in the U.S.S.R., is highly centralized. The Ministry of Health, U.S.S.R., is charged with the maintenance of the nation's health and the conduct of its medical research. It exercises its authority through the Ministries of Health of the Union Republics. Medical Research is conducted in institutes: (1) Institutes of the Academy of Medical Science, charged with broad theoretical problems and leadership in medical research; (2) Central Institutes of the Ministry of Health, U.S.S.R., where more specific problems are attacked; (3) Research Institutes of the Ministries of Health of the Union Republics where special local problems are studied.

The Academy of Medical Science budget is included in the overall budget of the Ministry of Health, U.S.S.R. For 1959, there were 228.3 million rubles provided. In addition there are special appropriations for new buildings, equipment, and other special needs.

The Institute is the basic research unit, the life and soul of the Academy of Medical Science. The organization of each institute rests in (1) the director, (2) the scientific council, and the division of organization and methods.

Medical Research Highly Centralized

Medical research also is highly centralized and subject to strict governmental planning and co

[1] Visited October 19, 1960.

trol. It must conform to all regulations of the Government, including the state philosophy and politics as well as the national economy. As to state philosophy "party principle in sciences" is one of the main tenets in any scientific investigation in the U.S.S.R. It must be based on "dialectic-materialistic methodology." (The theory of reality affirming continuous transformation of matter and dynamic interconnectedness of things and concepts, and implying social transformation through socialism toward a classless society.)

Priorities are given to certain areas of medical research: (1) Radiation sickness; (2) persistent diseases which have a tendency to increase, such as influenza, rheumatic fever, endogenous infections, malignant tumors, heart disease and disease of the nervous system; (3) diseases that occur frequently but can be controlled, such as pertussis, diphtheria, poliomyelitis, brucellosis, malaria, and tuberculosis; (4) diseases "of the past," such as plague, cholera, typhoid fever.

The Academy of Medical Science is charged with the preparation of the preliminary research plan of medical research for the country and coordinates medical research. Planning is done from the top down and from the bottom up. The top planning starts with a general directive from a party official. Details are worked out by the Ministry of Health, U.S.S.R., which refers the directives to the Academy. The Academy refers the directives to its institutes to work out their research plans within this framework. These preliminary plans are then accumulated and presented to the Commission on Scientific Planning, which presents the plans to the Presidium of the Academy of Medical Science for approval.

Planning from the bottom starts in either the laboratories or Institute of the Academy of Medical Science or in other medical research institutions. It usually deals with specific aspects of problems already being studied and on which the Institute wishes to elaborate. The plans pass through the Institute's scientific council to the Institute's planning commission, to the departmental bureaus of the Academy, where they are coordinated with plans of other researchers and then forwarded to the Commission on Scientific Planning. The latter directs the plans to the Presidium for approval and revision. Coordinated and revised plans then go to the Ministry of Health, U.S.S.R., for final approval.

Serious Handicap for Researcher

A serious handicap for the Soviet researcher is the ideological pattern on one hand and the changeableness of the party line on the other. A sudden shift in the party line from above can cause a complete reorganization of plans and scientific units. Work has to be abandoned and sometimes new work begun. Scholars have to abide by the official ideology and centralized planning, and they must be prepared to adapt themselves to possible variations in the party line.

New Institute of Pediatrics

The Government has appropriated a large sum of money for the construction of a new Institute of Pediatrics, which was scheduled to be occupied by the end of 1960. For this reason, the operation of the Institute was in a disorganized state, with all departments concentrating on plans for moving and for equipping the new building. The old building, which had 200 beds, had no department for infectious diseases. The new institute will have 500 beds in 1 unit, a 75-bed building for infectious diseases, a pathology building, a milk kitchen, and an animal house.

Concerned With Healthy Preschool Child

The Institute is particularly concerned with the healthy preschool child, his physical and mental development, and his training. Academician Nikolai M. Shchelovanov is interested in the development and physiology of the central nervous system in children from birth through 3 years of age.

The Institute is studying various pathologic states in early and late childhood. These studies, under the direction of Professor Tsimbler, include: (1) the treatment and prevention of tuberculosis; (2) severe gastrointestinal disturbances; (3) heart disease as a consequence of rheumatic fever; (4) leukemia and other blood diseases.

Acute infectious diseases of children are at present being studied at the Rusakov Hospital under Professor Nassov but were to be transferred to the new building. Problems of the premature infant are being studied by a group of scientific workers at the Institute of Obstetrics and Gynecology as this Institute had no maternity department. The training of children is studied in a separate laboratory, and a central nervous system laboratory studies diagnostic problems.

Problems Under Study

The Institute of Pediatrics has the following subjects under study at the present time:

- Pneumonia—Professor I. F. Dombrovskaya, AMS, at the First Moscow Medical Institute.
- Hematology—Professor A. F. Tur, AMS, at the Institute of Pediatrics, Leningrad.
- Metabolic Disease—Professor M. S. Maslov, AMS, at the Institute of Pediatrics, Leningrad.
- Rheumatic Fever—Dr. Sokoleva Ponomareva.
- Development of the Brain and Injurious Factors—Professor B. N. Klossovsky, AMS, at the Institute of Pediatrics, Moscow.
- Child Rearing and Training—Professor N. M. Sherebanov, AMS, at the Institute of Pediatrics, Moscow.
- Acute Infectious Disease—Professor M. S. Maslov, AMS, at the Institute of Pediatrics, Leningrad.
- Tuberculosis.
- Infant Pathology (particularly relating to to the newborn and the premature infant)—Dr. G. N. Speransky.

Affiliated With Committee of Child Welfare

This Institute is closely affiliated with the Committee of Child Welfare of the Presidium of the Academy of Medical Seience. The Institute organizes and leads the work in child welfare, and each year it conducts scientific sessions with other institutes located outside of Moscow. In 1959, the sessions were concerned with rheumatic fever and other acute diseases. In 1960, the concentration was to be on gastrointestinal disorders. Scientific workers of the Institute take active part n various congresses held in the other republics. They also make scientific reports on the work of the Institute.

Laboratory to Study Brain Development and Injurious Factors

In this laboratory, directed by Professor B. N. Klossovsky, AMS, many methods are used to study the development of the human brain in comparison with the development of the brain in animals. The study methods embrace morphology, phsyiology, biochemistry, and experimentation. The laboratory also has a ward of 20 beds for children of ages 1 through 6 who have brain damage or evidence of maldevelopment or retardation and who are subject to psychoneurological investigation.

The clinic is studying the etiology of brain damage along both clinical and research lines. A retrospective study of causative factors is conducted on neurologically damaged children. It is believed that maternal thyrotoxicosis is one factor that can produce fetal brain damage. To test this hypothesis a group of the children of mothers with this diagnosis have been studied in great detail. If the mother were well during pregnancy, the child turned out to be healthy. If she were ill with thyrotoxicosis, the pregnancy usually resulted in abortion, miscarriage, or a child with some malformation. Even if the child were essentially normal, some slight deviation could be found.

Experiments were performed on pregnant rabbits, dogs, and cats. Thiouracil was given to suppress and iodine given to increase thyroid activity. The experimental design varied the dosage of each and the time of administration. The fetuses were all delivered one day prior to term. Thiouracil caused a definite decrease in the size of the brain and produced myxedema.

Reinvestigation of Cretins

Although much has been known about the cretin for a long time, it was decided to reinvestigate these children at a younger age along neurological and physiological lines, including pneumoencephalograms. In very young cretins without treatment, the spinal-fluid pressures ranged from 100 to 120 mm to 400 mm of water. Wormian bones were present in the skull sutures, hearing was decreased, nystagmus did not develop, the skin had decreased sensitivity to pain, and mentality was poor. Following early treatment with thyroid there was great improvement. Spinal-fluid pressures, vestibular function, and response to pain became normal. As long as treatment continued, the children could be considered "almost normal."

The workers concluded that the brain in utero was not damaged to the extent previously thought but rather that its development was retarded and that this delay could be overcome by early treatment. However, if the mother had other complications associated with thyrotoxicosis, the brain

damage was more severe and did not respond to treatment. Because of the relationship between thyrotoxicosis and the development of the fetal brain, some attempt is made to find the disease in its early stages in the polyclinics and persuade the woman to have treatment before pregnancy.

Other Injurious Factors Being Studied

Many other possibly injurious factors are being studied with the idea that they represent preventable conditions. These include diabetes, quinine, contraceptives, radiation, and asphyxiation. Extensive clinical investigation cannot solve the problem of discovering all possible injurious agents since the mother may take medications or foods that may be harmful without any record being available.

In animal experiments testing the toxicity of drugs given during pregnancy, it is not sufficient that the pregnant animal seems undamaged. There also should be careful studies of the fetal brain.

Diabetes was considered as a disease that could affect the fetal brain. Experiments were carried out in animals with alloxin diabetes. When alloxin was given to pregnant animals in nonfatal doses, the brains were smaller than the controls; hydrocephalus and missing hemispheres (Cyclops) were encountered, and the early development of the fetus disturbed. Quinine has been shown to produce deafness, microcephalus and anencephalus.

Asphyxia was produced by putting cats in a box without air or by occlusion of the uterine arteries. After a 10-minute exposure the cats aborted, after 6 minutes kittens were born alive and were normal, after 8 minutes kittens were live born but were more active than controls. Injections of camphor that were tolerated by the controls caused convulsions in these kittens. Following rotation, the asphyxiated animals developed nystagmus and vomiting while the controls did not. It was concluded that the asphyxia decreased both the number of capillaries and cells in the brain. A retrospective study of children at a maternity home revealed that the longer the asphyxia at birth, the greater the injury. The Russians are acquainted with similar findings in work reported in the United States.

es on Development of the Brain

vritten by Professor Klossovsky was n 1960 by the Government Printing Office for Medical Literature. It is entitled *The Problem of the Development of the Brain and the Effect on It of Injurious Substances.* The delegation was given a review of the basic theoretical principles underlying his studies:

Stage I of Brain Development is the stage in which the brain is nourished for growth by the choroid plexus. It is a basic principle in biology that nutrition is vital to the development of cells. The choroid plexus makes the nutritive substance for the growth of epithelial cells, and from the epithelial cells the nerve cells are derived. The only nutrition for the brain at this stage comes through the cerebrospinal fluid that is much more rich in protein than is adult fluid.

Stage II, the Capillary Feeding Stage. Dr. Klossovsky said that he was the first to demonstrate how the capillaries of the brain develop and grow. He had a demonstration illustrating the various stages of this process arranged for the delegation's inspection. Interference with the normal process of capillary growth was said to be a most delicate method of testing for factors that might interfere with brain development. Under study were the effects of smoking, alcohol, and various drugs. The central nervous system change was said to depend on the stage of brain development at which the insult is received.

Principles Underlying Reflex Development

The delegation was then given statements as to the principles underlying reflex development: The vestibular receptors are the first to develop, and as the fetus moves these receptors send impulses to the brain. This is the explanation as to why the 4-month fetus has the same semicircular canals as the adult. The theory is that the development of the brain depends on the reception of afferent stimuli. For instance, in an experiment in which chloromycetin is given to damage the vestibular apparatus, the result is an underdevelopment of the brain.

Similarly, taste and smell in utero are necessary for normal brain development. The fetal kidne secrete urea into the amniotic fluid and it is tl that develops the taste and smell centers, whi in turn influence the normal development the total brain. If abnormal substances are i jected into the amniotic fluid, the normal deve opment of the brain is affected.

Development of the Child

Professor Sherebanov discussed the development of the child from birth to 3 years of age. Many Soviet workers have conducted experiments on the development of the central nervous system in animals. Present investigations are designed to study this development in man. The Soviet scientists apparently accept the principle that ontogeny repeats phylogeny, and many important investigations of the physiology of the central nervous system have been based on the ontogenetic method. The infant's brain is not morphologically developed at birth and allows both the study of inheritance and acquired influences. The Institute has its own clinic of 25 beds for the study of the development of normal children from 2 to 3 days of age to 3 years. It also has special laboratories and associated experimental work in other laboratories.

The development of children is studied by the classical methods of conditioned reflexes. Modifications of these classical methods, which do not harm small children, are used. Professor Nikolai I. Krasnogorsky in Leningrad, in his older age group, was able to use the secretory reactions that call for the collection of saliva. This method has not been used in infants because of the poor development of the salivary secretions and the trauma involved in the collection of saliva. The following conditioned reflexes were under study: motion; sucking; defense mechanism—startling; orientation; and reinforcement of the signal system by food or orientation.

From these studies it has been concluded that an infant between 1 and 2 months may respond to these conditioned reflexes. By 2 months, however, cortical function can be demonstrated, since in the establishment of conditioned reflexes the main role is assumed by the cortex. This conclusion has vast application in the U.S.S.R. It is the basis of the dictum that, subjected to training from this 2- to 3-month age, the cortex is capable of functioning.

More complicated reflexes, in addition to conditioned reflexes, have been studied from an early age. Results showed that at 2 to 3 months, sharp sounds can be heard; then by 6 to 7 months distinct sounds can be detected as well by the infant as by an adult. Small infants can also be conditioned to colors and other sensory stimulations.

The amount of sleep a child should have at a given age is thought to be important to child rearing. This has been studied and also the best environmental conditions for wakefulness and sleepfulness. Norms have been established according to age.

Muscular Coordination Studied

The Institute has studied the development of good muscular coordination, and a method of exercises and massage has been developed that is said to accomplish this objective. Experimental studies have helped to construct a system that promotes the development of speech.

The Russian scientists do not believe there is evidence that a fetus can be conditioned, and that the first conditioned reflex that can be developed is at 9 days of age. The vestibular reflex is first, then sound, with sight much later because of the complicated structure of the eye.

The favorite child for study of conditioned reflexes is between six months and 1 year of age. Because of their relatively simple structure, it is possible to obtain and verify firm results. The problem becomes more complicated with advancing age.

It is firmly believed that the proper management of the first year is fundamental to good brain development.

These studies are important, since the recommendations of this Institute are most generally approved by the Presidium of the Academy of Medical Science and the Ministry of Health and become the rules for infant and child-rearing in nurseries and kindergartens throughout the Soviet Union.

Staff of Institute of Pediatrics of the Academy of Medical Science, Moscow

Director: Academician Olga D. Sokoleva-Ponomareva.
Pediatrics Department Head: G. N. Speransky.
Pathologic Physiology Department Head: Profess Pyechkov.
Pathologic Morphology Department Head: I Dergachov.
Central Nervous System Laboratory Head: I Polosovsky.
Organizational Scientific Laboratory Head: Dr.
Biochemistry Head: Professor Titayev.

Chapter 16

Institute of Nutrition of the Academy of Medical Science, U.S.S.R., Moscow [1]

Function of the Institute

This Institute, established in 1930, has broad responsibilities for the nutritional health of the entire Soviet Union. All food processing must first be tested here before manufacturers can proceed with production. At the moment the Institute is investigating the production of canned dried milk, and all milk factories must await its approval before manufacturing can begin. The Institute has sponsored expeditions into the far north, into middle Asia, and into the mountains to study the nutritional needs of people of different nationalities in various climatic and geographical areas. There are nutrition laboratories in Kiev and Tbalisi that may in the future be organized as institutes, but at the moment this is the only one. The research program for 1961–62 consists of many problems—among them: (1) weight gain in pregnancy, (2) relation of protein intake to prematurity, and (3) differentiated normals for nutrition for various levels of the population.

Studies on Pregnant Women

In areas of the delegation's specific interest, the Institute deals with the nutritional aspects of prenatal and preschool health. Studies have been carried out on pregnant women beginning at the second month of gestation through the fourth month post partum. It was concluded that the pregnant woman needs more protein than the average nonpregnant healthy adult and as "the result of much research" the figure of 2 grams of protein per kilo of body weight has been decided upon.

On questioning, it was admitted that they had done no work on actually determining that the 2-gram figure was better than any other. The delegation was told this level had been determined by others, especially in the United States. (We informed them that as far as we knew the general figure recommended in the United States was 1½ grams per kilo.) They stated the figure recommended in Brazil was 2½ grams but that this was too much. It appeared that their "research" was conducted a number of years ago and consisted in giving the 2-gram level of protein per kilo to 29 pregnant women.

No Controls Used

No controls were used, but careful and complete metabolic studies were carried out on those 29 women while they continued their normal life at work and at home. The delegation inquired as to what criteria were used to determine that this diet was a success and was told that all 29 women delivered normally at the Institute of Obstetrics and Gynecology, that the infants were better than normal according to their weight and length, and that there were no premature infants. On the basis of this "experiment" 2 grams of protein per kilo has become the law of the land.

Other Factors in Recommended Diet

The recommended diet for pregnant women, of course, pays attention to other factors besides the protein. During the second half of pregnancy, milk and dairy products are emphasized to provide adequate calcium. Vitamins are provided through fruits and vegetables and an added supplement of 100 mgs of vitamin C is given daily. In the first half of pregnancy, salt is optional; in the second half a total of 7 or 8 grams is allowed—4 as calculated from food and an added 3 to 4 grams optional. No added iron is given.

The total daily calories permitted average between 3,000 and 3,500. For overweight women, total calories can be cut to between 1,500 and 1,800 but never as low as 1,000 calories. There was no answer as to the weight gain to be allowed in

[1] Visited October 21, 1961.

pregnancy—this is a "specialized question" for 1961–62. When told of our problem of being unable to get women to eat 100 grams of protein a day, they said this never happens in the U.S.S.R.—there is no refusal and all food is completely eaten! The Institute scientists are convinced that the incidence of prematurity is related to the amount of protein and as evidence point to the high incidence during the war years.

Department of Child Nutrition

A main task of the Institute had been to work out the definite content of children's food for different years of age. There has been a special Department of Child Nutrition since 1932. Based on the recommendations of this Institute is the diet that the nurseries, kindergartens, and children's homes throughout the U.S.S.R. feed their children.

All children in the Soviet Union must receive regular and adequate food. Milk is considered a most important food, and adequate milk supplies are now available. It is used in all forms—natural, yogurt, and other sour-milk products are very popular. All milk in the U.S.S.R. is said to be pasteurized.

Study of Nutrition of Healthy and Sick Child

Dr. Polteva is studying the nutrition of the healthy and sick child according to age and by using the individual study approach. She is trying to discover the effect of protein lack in metabolism and psychoneurological disease, and has published a system for determining the protein needs of children from birth to 9 years of age. Dr. Polteva and other workers may use any of the children's departments for research. The results become recommendations and, if approved, are introduced to other children's departments. It is recommended that the age group from 1 to 3 years have 4 to 4½ grams protein per kilo and the 3 to 7 and the young school ages are said to need 3 to 4 grams.

Dr. Polteva has published a number of articles on the relationship between low-protein intake and a lowering of resistance to infection. The early signs of protein deficiency in children were reported as changes in growth and development and changes in the state of immunity. This was measured by the ability of white cells to phagocytize bacteria, determination of serum complement titres, the frequency of upper respiratory infection, and other clinical signs.

A discussion then took place on their methods of feeding normal infants and children. Every effort is made to have the baby breast-fed to the age of 6 months. If there is insufficient milk, the first choice is to put the infant on pumped breast milk, and if this is not available, the physician writes a formula and the milk is prepared and bottled at a milk kitchen. A comparison of formulas showed theirs to be very similar to those used in the United States.

Instead of fresh milk much sour milk, especially yogurt, is used. These formulas are so thick it is difficult to get them out of the narrow bottles and the feeding is usually by a spoon. Cereal is usually added at 5 months, but earlier if there is insufficient breast milk. Vegetable purees are added at 5 or 6 months, and these are obtainable in individual feedings in jars as in this country. Vitamin D, 4,000 to 5,000 units, is given beginning at from 6 to 8 weeks. Later they change to cod liver oil, and continue this to 7 years of age. Vitamin C also is started at from 6 to 8 weeks and is in the form of carrot juice, cabbage juice, and orange juice if available. No routine iron preparation is used. The most important criterion for adequate growth is the height-weight ratio. Standard height, chest circumference, and weight charts are used.

Staff of Institute of Nutrition of the Academy of Medical Science, U.S.S.R., Moscow

Director: O. P. Molchanova, corresponding member of the AMS.

Chief of Infant Nutrition Section: Dr. Polteva.

Chapter 17

Institute of Defectology, Academy of Pedagogical Sciences, R.S.F.S.R., Moscow [1]

Institute's Functions

The Institute of Defectology, which is housed in what appears to be, an old and poorly maintained building, concentrates on disorders of children such as deafness, blindness, mental retardation, motor defects, speech and reading deficiency, and combinations of these disorders. Children with defects are studied by a variety of methods that utilize many scientific approaches—medical, psychological, psychiatric, and pedagogic. The objective of all studies is to establish a definite diagnosis and to discover compensatory means of substituting for a defect. Every effort is made, however, to correct the defect itself if at all possible.

The long period of study and training requires the establishment of a favorable environment for normal development. This means that special schools must give the same training the normal child receives, so that when the defective child graduates he will have as similar an education as possible. These special schools have a difficult problem, since the learning process is complicated and must be related to the child's defect. Through vocational training, however, handicapped children can receive higher education and are prepared to lead active and productive lives.

Staff and Budget

There are 225 persons who work in this Institute, of whom 25 percent are doctors of medical science, doctors of biological science, or professors. There also are 70 senior scientific workers who are candidates for degrees in biological or medical science. The Institute chooses its workers by competitive examination every 5 years. At the time of the delegation's visit, there were 12 *aspiranturas* in training as day students and 12 others taking their training by correspondence. This Institute and its affiliated children's institutions have an annual budget of 5 million rubles.

Special Departments

The Institute has a number of special departments: a clinical and pathophysiologic department; a scientific laboratory to study psychologic processes; a department for the development and upbringing of handicapped children; a department for speech impediments; a laboratory to study technical means of compensating handicapped children; a department dealing with apparatus for the blind; a laboratory to study the deaf, dumb, and blind; a special experimental institute for the study of the blind, and a special experimental institute for the study of the mentally retarded.

Through these departments, the Institute studies the pathophysiologic and psychologic characteristics of children with various defects and studies motor defects in handicapped children. A classification of defective children has been developed, and treatment is given accordingly.

Study of Deaf and Blind

In laboratory studies on psychological peculiarities of children who are both deaf and blind, therapy is based on the Pavlov theory of an analyzer system composed of three parts. The peripheral receptors receive sight or hearing impulses; these are transmitted by the afferent nerves to perceptors in the central nervous system, and their analysis results in understanding. The scientific workers at the Institute have been trying to invent an apparatus to perform this "analysis."

New Training-Teaching System

A new system of training and teaching recently has been established, and the government has issued special instructions for the use of this system in working with handicapped children. The

[1] Visited November 9, 1960.

state-prescribed school system for defectives is organized as follows:

Preschool age: Early training and upbringing methods are included. The theory is that prevention and compensation are easiest at this age.

School age: An obligatory special 8-year program to correct or to compensate for the defect and to teach general educational subjects as close to the normal school curriculum as possible.

Adults: Schools are available for training certain adult defectives, such as the blind and the deaf, for a profession.

In addition, there are *vocational schools* to prepare the child for a useful life. These schools use special techniques, so that the potential of the individual child can be developed. For instance, a child may be trained to attend a certain technological school, such as a school of metallurgy for the blind. There are also numerous professional schools dealing with the arts.

Care of Defective Infants

The Ministry of Health is responsible for the diagnosis and care of defective infants under 2 years of age. The infants are cared for in a special House for Infants whose pediatric staff works in close cooperation with the staff of the Institute of Defectology. The Ministry of Health's special institute for the House of Infants is called the Special Scientific Methodologic Institute of Pediatric Psychodynamics. The Institute of Defectology accepts children from 2 to 16 years of age, and the patients may be referred by physicians, parents, or schools. The Institute does not accept children whose primary problems are of emotional disturbance or epilepsy.

Facilities of the Institute

Inpatients, 100 beds for all types of defects. O.P.D. clinic, case load of 100 patients. Three boarding schools, one for the blind, one for the deaf, and one for mentally retarded with 40 beds. Twenty-five boarding schools for all kinds of experimental work.

Tour of Laboratories

Phonetic and Acoustic Laboratory: The delegation was told that the diagnosis of hearing defects in small children is difficult, particularly if it is combined with dumbness or defective speech. The objective of this laboratory is to utilize the minimum hearing present to its maximum capability. There was need for a practical method of testing hearing, and since the painful skin galvanic reactions of the psychogalvanic method could not be used in small children, a new method has been successfully developed.

In testing children from 2½ to 3 years old, the sound signal must be meaningful and of interest—"signal meaning." This new method is said to determine and to record objectively the exact level of hearing to sounds of varying wavelengths and intensities. The child is placed in a closed cubicle with a worker, and the earphones of an audiometer are applied. A sound is introduced loud enough for the child to hear. When the child reacts, the worker presses the youngster's hand on a bulb. When the bulb is pressed, an interesting colored picture appears on a frosted screen before the child. After approximately three demonstrations, the child's conditioned reflex is established. He hears a sound, presses the bulb, and a pretty picture appears. When this reaction becomes a habit, the hearing test can be performed at varying frequencies and intensities. The characteristic of the sound, the time to react and the intensity of the reaction are all recorded. The youngest age for consistent results was found to be 3 years, and all but the imbecile can be tested. The test is not successful in the child with a motor defect as is seen in cerebral palsy.

Studies have been attempted to use the conditioned reflex response as a test for hearing of hospitalized 2-month-old infants, with feeding as the reward.

Teaching the Blind: Blindness is associated with a central nervous system defect, the delegation was told. This was demonstrated in a study of the electrical activity of the brain in 40 blind patients, ages 15 to 30 years. In the absence of vision, cortical activity was disturbed.

Using the four-channel electroencephalograph during sleep and after light stimulation, the alpha rhythm is depressed in the blind. In acquired blindness, certain sound stimuli can make the alpha rhythm appear. Reactions to orders to open or close eyes can make the alpha rhythm reappear. The congenitally blind never have developed alpha rhythms and therefore they do not respond.

If the child with acquired blindness has an instrument to register skin potential attached to the wrist and oscillograph electrodes attached to the eyelid, and if the child is given a task such as tracing a familiar object such as a square, the skin potential of the wrist increases, followed by

right and left eye movement. When the stimulus stops, the skin potential first disappears and the eye movements later halt. This phenomenon does not occur in the congenitally blind, since there has been no life experience connecting the movement of the hands and eyes (though the congenitally blind can move their eyeballs on command).

Hearing reactions of the blind of all ages are normal. In teaching the blind, conditioned reflexes must be established, and the main role is played by the cerebral cortex. Through sound, a big vocabulary can be acquired, although it is difficult for the blind to imagine what a word means. To develop perception, physical culture methods are used to have a word create the image of the object. The delegation was given a demonstration of an apparatus that scans printed matter letter by letter and line by line with a photoelectric eye. The photoelectric eye transforms each letter into a distinctive sound. It takes a child about 40 hours to learn to read by this method. Braille is, of course, the standard method of teaching the blind to read.

Department of Pathophysiology: This department, formerly headed by Professor A. R. Luria, is now directed by Dr. Pevzner. Informed of our visit, Professor Luria made a special trip to the Institute to tell us of his work. The laboratory is primarily concerned with the diagnosis of mental retardation and with the discovery of other defects that may cause an erroneous diagnosis of mental retardation. Psychometric examinations used in the United States are in disfavor in the Soviet Union. Dr. Luria said that an IQ of 70, for instance, can be the result of a variety of causes not related to the child's native capacity. The low IQ can be the result of congenital brain defect or *oligophrenia*, prenatal injury, a sensory defect such as hearing loss, or long inactivity caused by disease or malnutrition. The task of the laboratory is to make the correct differential diagnosis using psychological and physiological techniques. The theory is that IQ is a purely quantitative test and that what is needed are qualitative examinations. It is clear, therefore, that in the U.S.S.R., psychometric testing is not given much weight, either in diagnosis or in educational placement.

Earlier Report Proves Helpful

The Children's Bureau of the U.S. Department of Health, Education, and Welfare had provided the delegation with a report by Dr. Joseph Wortis, clinical professor of psychiatry at the State Un versity of New York, entitled *Mental Retardati in the Soviet Union.* This work, based on a week study of mental retardation and relat subjects, proved invaluable to the delegation. a visit to the Institute of Defectology, Dr. Wor had interviewed both Profesor Luria and D Pevzner.

As an addendum, Dr. Wortis, in his report, pr vided a translation of the official declaration of t Ministry of Education, R.F.S.S.R. and the Mi istry of Health, U.S.S.R. on "The Principles Admission to Special Schools for the Retarded This declaration illustrates the soviet's concept mental retardation:

> Auxiliary schools will accept children who are studyi unsuccessfully in the public schools, provided that ped gogical investigation shows that they are unable to abso the program of the public school, and provided furth that medical examination indicates that the cause of t failure of these children is a brain defect or disea which hampers successful education in the public schoo
>
> Transfer can be made only by a special commissio and only when the following conditions are satisfie . . . the public school must have recognized the retard tion—and for not less than one school year took necessary measures to improve his success.
>
> When child psychiatrists also concluded that the cau . . . is a mental defect due to organic brain defect disease.

Dr. Wortis' translation reveals that auxilia schools shall not admit—

> Children whose backwardness in school has a tempora character and is the result of poor health or deficienc in upbringing. Retardation in the public schools must overcome through individual help in studies, treatme and the simultaneous work of the school and the fam in the education and training of the child.

The Wortis report also says that—

> Each student of an auxiliary school shall be accord an annual many-sided review of his status by the ped gogic soviet (committee) of the school, for the purpose revealing the possibilities of his return to the regu public school.
>
> The director and the pedagogical collective of the pub school must create appropriate conditions for the stude transferred from auxiliary schools, and carefully lo after them for the purpose of preventing their failing ba in the future.

Narrow View of Retardation

The Soviet therefore takes a narrow view retardation and limits it to brain damage or d ease. Other types of intellectual inadequacy regarded as the result of social, educational, psychological causes and in the province of ped

gogy. In reference to retardation of this first type, the Soviet workers all use the term "oligophrenia." Their philosophy also explains the elaborate efforts to differentiate the oligophrenic from the functional cases.

Dr. Pevzner, who has worked for 30 years in the field of oligophrenia and has recently published a book on the subject, discussed her ideas on this subject. To quote from a recent essay of hers:

> Oligophrenia is a kind of underdevelopment of the complex form of mental activity which arises as a result of an organic lesion of the central nervous system at different stages of the intrauterine development of the fetus, or in the very early period of life.

The main pathologic lesion is a diffuse injury or defect of the cortex, she says, adding that there may be other associated factors—hydrocephalus and a superimposed focal lesion.

Dr. Pevzner expressed these views:

The crucial physiological factor in the pathogenesis of oligophrenia is the inertness or immobility of the reactions of the feebleminded. Anatomical defects may be expressed by contributing to the inertness or lack of plasticity. In its evolution, the mammalian brain has constantly gained in its plasticity. The lack of plasticity represents a lower evolutionary stage of brain development.

Clinically mental defectives show a lack of capacity for abstraction or conceptual generalization. Examples of lack of plasticity are weakened capacity for both excitation and inhibition: weakened inhibitions, the restless or excited; weakness of excitatory processes, the torpid or indolent. The hyperactive child is first taught by external restraint. Then there comes self-imposed physical restraint and later internalized and subjective restraint.

Attentiveness Measured

Professor Eugene Sokolov, Professor Luria's associate, had been measuring and recording attentiveness by studying a number of physiological variables, especially shifting changes in the skin potential and in the calibres of the blood vessels of the scalp and fingers. He had recorded the response of children to words related by sounds or by meaning and thus had studied the steps through which language development proceeds both normal and defective children. Dr. Wor- was much impressed with this research, with its important implications for the analysis of the thinking processes and for corrective education. Dr. Luria has long been interested in the organizing role of speech in the development of thinking and abstract concepts in children.

Dr. Sokolov's technique and the electroencephalogram are used to differentiate the oligophrenic feebleminded from feeblemindedness caused by "inactivity." A most important discovery was that the physiological techniques could differentiate primary oligophrenia from mental retardation secondary to slight deafness. This finding led to a major reorganization of the Soviet school system. In ordinary schools, 4 to 5 percent of the children were found to have some impairment of hearing, but 16 to 24 percent of those considered feebleminded were found hard of hearing. As a result, 20 to 25 schools for the feebleminded have been closed and replaced by schools for the hard of hearing. The delegation was told that this was a good example of how research findings in the Soviet Union can be immediately translated into practical policy causing a revolution in pedagogy.

Treatment of Cerebral Palsy

Dr. Luria described the Soviet concept behind the treatment of cerebral palsy. If there is a fixed cortical lesion that causes spasticity of the legs and apparent involvement of the arms and hands, the latter disturbance may be a secondary disturbance caused by synaptic conduction. The leg cannot be helped, but if the synaptic conduction can be blocked by inhibitory drugs, the function of the arms and hands may be improved. Anticholinergic drugs such as physostigmine and a new curare-like drug "galantamine hydrobromate" have been used in 200 cases with very good results.

"The Mentally Retarded Child"

A Soviet text describing the Russian system of studying the mental activity of children in a more natural way and under normal surroundings soon will be published in England. Entitled "The Mentally Retarded Child," the book will tell of the advantage of studying early and simple reactions in making a differential diagnosis: If a child is ordered to squeeze a ball, the oligophrenic and normal child respond differently. The former, after an initial inertia, produces an increased and prolonged tonic reaction.

Laboratory for the Deaf, Dumb, and Blind

We visited the laboratory of Professor Sokolyansky, where Dr. Marceva told us of their work with the children who are deaf, dumb, and blind. Most of these defects are the results of meningitis in the first 2 or 3 years of life. The second most common cause is birth trauma. These children have only one sensory system, touch, through which they must make all contact with their environment. They must be taught to speak, the proper habits of behavior, and the ability to imagine surrounding objects. They first are taught finger signals and finger spelling, then Braille. Then grammar, vocabulary, and oral speech are taught last.

The deaf, dumb, and blind must associate with each other and make contacts through tactile receptors and must learn to talk through Braille. A machine is available which makes tactile reading possible. It is usually possible to teach some occupation. In the R.F.S.S.R., there are 80 such children between the ages of 2 and 14 years in special sanitoria.

Brain Damage

In the laboratory for the study of brain damage, Dr. Novikova told of these results: Electroencephalographic studies have been made on normal children, oligophrenics, and children with other defects. The oligophrenics showed poor alpha rhythms and no change in response to strobe light.

School Statistics

Soviet children are admitted to the auxiliary schools between the ages of 8 and 10 years only, and no child is admitted to class 4 or above. Dr. Wortis found that of a school-age population of 16 million in R.F.S.S.R. there were 48,000 children in or being considered for admission to the schools for feebleminded. This is a rate of 3 per 1,000 school-age children. (Masland estimates that in the United States, 3 per 1,000 children born never reach the 7-year level and that 30 per 1,000 never reach the mental age of 12 years.) The proportion of those in auxiliary schools to the total population is 1.4 per 1,000 for R.F.S.S.R.; 1.6 per 1,000 for Tbilisi in Georgia; and 1.5 per 1,000 for Sukhumi, on the Black Sea. Dr. Wortis, from the background of his special training and from the concentration of his inquiries in the Soviet Union, concludes that "though statistically reliable comparisons are not possible, and will not be for some time, there are some indications that the actual amount of true mental deficiency in the Soviet Union is less than it is here."

The delegation was cautious in accepting this statement, in view of the difference in diagnostic criteria used in the two countries.

Staff of Institute of Defectology Academy of Pedagogical Sciences, R.F.S.S.R., Moscow

Director: Dr. Dyatchkov.
Assistant Director: Dr. Morozova.
Director, Department of Oligophrenia: Dr. Dulnyev.
Chief, School of Blind and Half-Blind: Dr. Zyemtsov
Chief, Department of Mentally Retarded Children: D
Schiff.
Chief, Laboratory for Deaf, Dumb and Blind Childre
Professor Sokolyansky.
Scientific Workers: Drs. Beltukov, Korobin, and Neym
(hearing defects); Dr. Peyzner (central nervous syste
defects); Dr. Boskis (speech defects) and Dr. Eydino
(motor disturbances).
Chief, EEG: Dr. Novikova.

Chapter 18

Central Research Institute for Health Education, Moscow [1]

Functions of the Institute

The Central Research Institute is a research center for working out the methods of health education among the different population groups. This research consists not only of the methods to be used but also the development of visual aids, guides, and publications—especially for teachers of health education.

A chart was presented showing the administrative structure. There are 100 professional workers employed in this capacity, of whom 20 are physicians (5 pediatricians) with the degree of Candidate of Medical Sciences, and 2 are professors. An experimental shop has 250 employees to prepare displays, bulletins, exhibits, and other visual aids. For purposes of publication, there is an art council and an editorial council.

The emphasis put on different programs in health education is in accord with that of the U.S.S.R. Ministry of Health. The order of priority is maternal and child health, prevention of cardiovascular diseases, cancer, and the eradication of infectious diseases.

General Health Education in U.S.S.R.

Health education is stressed in the U.S.S.R. because of the preventive aspect of its medical care program. Each province, republic, oblast, and city has its own House for Health Education. In the krais and outlying districts, health education is carried on by health educators from the Sanitary-Epidemiological Station.

Education of the public in health matters is carried on by all medical personnel (doctors, nurses, feldschers, midwives) as part of their regular duties. It is carried on in all institutions, hospitals, clinics, as well as in Houses of Culture and Palaces of Culture in the U.S.S.R. In addition, when doctors continue their postgraduate or refresher training, health education is included as part of the curriculum.

[1] Visited November 10, 1960.

Each republic has its own Center for Health Education, which is responsible to the Ministry of Health. In larger hospitals with 300 or more beds, special physicians are assigned as "Organizers for Health Education." The same position is also found in large polyclinics. Other agencies and departments help promote health education by the following means:

- Ministry of Education—through schools.
- Ministry of Culture—through use of radio, television, and movies.
- Ministry of Trade—by making labor group meetings available for health education opportunities.
- Society for Dissemination of Scientific and Political Information.
- Red Cross (Red Crescent in five Moslem Republics).

Parental Health Education

The maternity consultation center and the midwife and feldscher stations are the places where most maternal education takes place. (The workers here reported that 10 percent of the births in rural areas take place in the home. The report by Dr. Ygorova on October 17, 1960, stated that almost 100 percent of the births in rural areas occur in maternity homes!) Mothers also receive educational advice from *Schools for Mothers* and by correspondence.

In all home visits by medical and auxiliary personnel, advantage is taken of the opportunity to carry out general health education. The medical personnel also provide materials for the mother covering menopause and other gynecological problems. In addition, there are pamphlets for fathers which are given at the time of discharge of the baby from t

Chil

Health
children c

Within 3 days of discharge from the maternity home, the mother is visited at home by the pediatrician and nurse in the city and by the feldscher and nurse in rural areas. Such contacts between the two groups are not less than 3 times during the first month of life, and not less than 14 to 16 times during the first year. These visits are used to discuss sanitation, breast feeding, bathing, sleeping, vitamin supplementation, and use of other foods. Materials are available for later problems of children, including a whole album of pictures of how to exercise in order to prevent pneumonia.

Mass Forms of Health Propaganda

Mass forms of health propaganda are intensively applied in the U.S.S.R. Houses of culture and workers' clubs hold meetings for young mothers and fathers, and at these gatherings physicians, lawyers, and other specialists speak and health educational films are shown. Emphasis is placed on the promotion of breast feeding; the role of vitamins, vegetables and fruit in nutrition; the improvement of children's health; and the prevention of acute infectious diseases. Parents are instructed on the importance of vaccination, and compulsory time limits are fixed for the immunization of children. Much attention is paid to the development of good health habits, and other educational subjects are presented.

The medical students in the pediatric faculty have many hours of lectures on health education. This Institute conducts a 2-month postgraduate training course in health education. In general, however, the Institute does not take any part in direct teaching. Its functions are organizational and methodological and it prepares the material to be used in health education.

Booklets, Charts, Posters, Films

The delegation was shown many interesting posters, booklets, and charts. Some of these were quite elaborate and are apparently used as demonstration materials in clinics and health centers. Others, quite simple, are given the mothers. There were some very elaborate, beautifully illustrated books that the mother can buy at a very small cost. The Institute found that if the family makes even a token payment for material, it is valued more, and more attention paid to it!

The delegation was shown four films used for health education. The first of these was based on the concept that in order to discourage abortion, the hazard must be overemphasized. The staff was quite willing to admit that the danger was exaggerated in order to frighten women enough to keep them from requesting an abortion. The film was technically quite good, though its philosophy might be questioned.

Two mental hygiene films on the upbringing of children showed what harm inconsistency and overprotection of children can do. The need for a child to do things for himself and to express himself was stressed. The films quite frankly put the responsibility for the upbringing of the child on the mother and presented her with a picture of what would happen if she did not do it according to the way prescribed.

The fourth film was on accident prevention. This was a rather old film but an exceedingly good one. It showed graphically the simple things that can be done around the home to prevent common accidents.

Staff of Central Research Institute for Health Education, Moscow

Director: Dr. Karmanova.
Senior Scientific Worker: Dr. Zborovskoya.
Senior Scientific Worker: Dr. Gershov.
Scientific Worker (Maternal and Child Health): Dr. Shibayeva.

Chapter 19

Institute of Obstetrics and Gynecology, Academy of Medical Sciences, U.S.S.R., Leningrad [1]

Functions of the Institute

The Institute of Obstetrics and Gynecology in Leningrad, which works in close coordination with its Moscow counterpart of the same name, has been in existence 150 years. The work of this institution is designated by the Academy of Medical Sciences, and its assigned tasks are treatment, research, and methodologic organization of obstetrics and gynecology for the entire Soviet Union. If a new method of medical practice is suggested, or if a newly designed piece of apparatus is offered, these are referred to the Institute for critical evaluation and recommendation. The Institute, which has received a grant of 4 million rubles for reconstruction, gives advanced training to physicians and scientists. It has clinical and research laboratories in diagnosis, biochemistry, endocrinology, bacteriology, anatomy, histology, and embryology.

Research on Central Nervous System

The Institute is conducting research on various pathologic states of the central nervous system; on conditioned and nonconditioned reflexes in the newborn; on planned birth and the elimination of pain; on methods to improve psychoprophylaxis; on the connections between the mother and fetus and the reflex mechanism underlying the birth process; on the biochemistry of the uterine muscle (especially in connection with inertia); on anomalies of the fetus; on the beneficial effects of 15 to 17 hours sleep for post partum patients; on the improvement of midwife training; on special methods of resuscitation and on the neurological syndromes that arise following asphyxia; on the problems of perinatal pathology, and on the prophylaxis of eclampsia. It is also a premature infant center.

Controls Activities of Other Centers

The Academy of Medical Sciences has 34 institutes in the various medical specialties, such as therapy and surgery, and these are known as the head institutes. Each is acquainted with the research and medical activities in its own oblast. The Institute of Obstetrics and Gynecology in Leningrad is in contact with 103 obstetric and gynecologic centers whose clinical work and research activities are controlled by this institution. Each of these centers must clear its plans for scientific research through this Institute, and therefore, the Institute knows the problems being studied and also the areas of research not being satisfied. It is thus possible to regulate work and mobilize efforts toward the solution of special problems. Several times a year conferences are held for the discussion of problems and for the review of activities. Theoretical problems in scientific research are limited to those that may eventually have a practical application. Clinical treatment of patients is possible providing such studies are not harmful to the patient.

This hospital, which contains 150 obstetric and 150 gynecologic beds, has a concentration of patients with serious complications of disease. For example, the assistant director for research, Professor Becker, is studying pregnancy complicated by cardiovascular disease and toxemia and because of this, a large number of women with these complications are sent to the Institute.

Scientific Plan

The scientific plan for this Institute calls for a concentration of attention on a few acute problems, and operations are so organized that clinical and laboratory work complement each other. No undergraduate students are present, but postgraduate courses ranging from 2 months to 3 years are given. The Institute also trains scientific workers

[1] Visited October 24, 1960.

and aspirants working for Doctor of Medical Sciences degrees. Some hospitals prepare obstetricians for practice, but here they are prepared for academic and research careers. Postgraduates' programs are planned to acquaint them with different types of problems and methods of investigation. At the time of the delegation's visit, there were one ordinant, one aspirant and two postgraduate workers.

Research on Endocrine Disturbances

A major problem is the prevention of prenatal and neonatal death; prophylactic work in reducing newborn mortality must begin in early pregnancy. There is great need for studies on the pathophysiology of prenatal life and development.

Some success has been achieved by the treatment of certain endocrine disturbances, which demonstrate the intimate relationship between mother and fetus. The science of pathophysiology is in its beginning, and at this stage, hypotheses must be set up and general rules and regulations established. One such hypothesis is that the stage of implantation and placentation is critical and that effects that may not injure later may be pathologic at this time.

To test this hypothesis, experiments involving "tens of thousands of animals" were conducted with every conceivable type of stimuli at various stages of pregnancy. Heat, cold, X-ray, isotopes, and anesthesias were used. The first 3 to 11 days in pregnancy were found to be the critical times in the rat. Retrospective studies of women with fetal deaths and malformation suggest the period of implantation and placentation as critical. New laws will be recommended to protect women in early pregnancy—laws demanding lighter work and other accommodations—as they are now protected in the second half of pregnancy.

Other fields of research involve hygienic measures during pregnancy; improvements in the psychoprophylactic methods through combining them with physical culture, and the early diagnosis and prophylactic treatment of toxicosis.

Immunization by Staphylococcus Toxoid

Particular interest was a massive experi- the use of immunization by staphylococcus against "hot" strains. Experience in is elsewhere, has shown the emergency of nt strain of staphylococcus. This material, prepared by the Institute of Experimental Biology and Medicine in Moscow, has been given to 12,000 women in 13 consultation clinics. All the women in these clinics got three doses of toxoid beginning at the 32d week in order to provide passive immunity to the fetus. Incidence of both maternal mastitis and neonatal skin infection was reported as reduced 3½ times, and level of immunity was said to rise. The results are so encouraging that they hope to expand the use of toxoids, as more immunization material becomes available. On questioning as to controls, the delegation was told that other clinics, unable to be provided toxoid, were used as controls but no figures on the actual incidence of infection in either group were given. Reactions were said to be slight, chiefly local hyperemia and edema lasting a few days.

Experiments using an alum precipitated toxoid are also being carried out. The complement level was said to rise from 0.76 to 7 to 30 units 1 month after treatment.

Studies are being conducted on intrauterine infection, climateric neuroses, and the pathogenesis of infertility.

Diagnosis of Fetal Disease

The delegation was particularly interested in their methods of diagnosing fetal disease. We were shown an apparatus that had been sent to New York to the Soviet Exhibition of Science, Industry, and Culture but was now, after 5 years of use, being improved upon by adding new features. This apparatus registered four processes: phonocardiograms and electrocardiograms of both mother and fetus. In practice, the phonocardiogram proved the more useful in separating the maternal and fetal hearts. The apparatus, having passed its tests and been approved by the Academy of Medical Sciences, is to be improved upon and made available to the whole Soviet Union. The stumbling block it has encountered sounded familiar: delays in production.

The delegation was told that the Institute was able to record the fetal heart in 100 percent of cases! A number of interesting physiological observations had been made on varying states of the fetus. The fetal heart rate did not vary with fetal movement or change in position; it did vary from day to night. It was markedly affected by the change in oxygen associated with the mother

holding her breath and with pathological decrease in oxygen supply.

Evidence of a high incidence of asphyxia was found even though the fetus did not pass meconium. The first sign of asphyxia was an irregular tracing of varying amplitude. The second stage was marked by slowing and reduction in amplitude, and the third was a straight line. The Institute is convinced that its studies can detect severe fetal distress with sufficient reliability to justify induction of labor. To make a complete investigation of the state of the fetus in a pathologic pregnancy, such as Rh sensitization, takes about 2 hours, although it is hoped the examining time can be reduced to 1 hour. The practical application is the routine administration of oxygen to women during the second stage of labor and delivery. This explains the oxygen pillows in universal evidence.

No research has been conducted on uterine blood flow. The Institute is studying uterine inertia biochemically and determining the protein, actinomyosin and ATP contents of uterine muscle at various stages of pregnancy.

Pathology Museum

Professor Klyspka showed the Delegation a very old collection of female pelves, said to be the third largest in the world. The museum had an excellent exhibit of obstetric and gynecologic pathology, and a collection of fetal pelves and fetal malformations. The histology laboratory was not seen as it was in repair.

Department of Clinical Physiology and Pathology of Pregnancy

This department, under Professor Becker, had 30 beds for the study of abnormal pregnancy. Patients were cared for in four-bed wards. Under treatment were cases with retinal detachment, hypertension, nephropathy, placental bleeding, toxemia, and cardiovascular disease.

Delivery Department

Professor Klyenitsky is the head of the obstetric department, and his assistant is a senior scientific worker, Dr. Byeskrovnaya. The hospital delivers 4,000 patients a year, some of whom receive their prenatal care in this hospital and others of whom are from women's consultation clinics in other parts of Leningrad. There is a total obstetric staff of 50 physicians, each of whom works 16 hours on delivery duty every 10 days. This is followed by a free day. The remaining time they work in the outpatient department and do research. There are five service physicians on call at all times in the delivery room. Four were postgraduate ordinants and one an aspirant. They work under the direction of a senior man who has had several years of training. The hospital has a small operating room for forceps deliveries and for the repair of episiotomies and tears, and a major operating room for caesarean sections.

During the first stage of labor, patients have a large central room where they may read, sew, walk about or lie down. A television set was to be added. It is believed that patients are more comfortable if their minds are occupied with something besides their labor pains. Contractions of the uterus were being recorded externally.

The delivery suites have four cubicles divided by curtains so that four deliveries can take place at the same time. Each cubicle was staffed with a service physician and a midwife. The senior doctor was available for consultations and emergencies.

In the delivery room two patients were in active labor and one had just given birth. As the delegation walked through the adjoining ward, the second patient gave birth. Both of these women were primiparas. They had no analgesic or anesthesia and were very quiet. They were straining, and from an observer's viewpoint, they should have been feeling pain. Whether they actually were or not could not be determined. The women were being constantly supported by kind attendants. Our unofficial interpreter heard one mother being told that "a good Soviet citizen does not make these noises." Forceps of any type are rarely used. During delivery footholders are used. The incidence of episiotomies was 9 to 11 percent, and their repair and that of tears may be delayed as long as 2 hours after delivery. No routine oxytocics are used after delivery. Deliveries are made with surgically scrubbed hands and arms but

This was translated into centimeters by holding the tape against a ruler along the back of the table. Similarly the shoulders, the chest, hips, legs, and length were measured. Nothing, however, was written down. A pair of calipers then was produced and various measurements were taken. Again nothing was recorded. No one listened to the baby's heart or lungs. The baby was then weighed, wrapped tightly in a blanket, a number tied around his middle, and was sent to the newborn nursery.

Psychoprophylaxis

The psychoprophylaetic lessons that are universal throughout the Soviet Union are given in the Women's Consultation Clinic and Outpatient Department, but in addition this Institute is conducting a special research project seeking to improve the method through combining it with physical culture.

The pregnant woman at 32 weeks starts her vacation from her work. Her pay continues, and her job is secure until she is 2 months post partum. At 32 weeks, the lessons start and continue for 6 weekly sessions.

In this course, women go to a different department of the Institute, a physical culture department. The program begins at the 32d week, and the women attend on alternate days 3 times a week up to delivery. They are taught methods of producing tension of muscles and relaxation. Exercises are designed to strengthen and develop all the muscles that will be used in delivery. They learn how to rest between pains and how to obtain complete relaxation, the correct method of breathing, how to support proper uterine contractions and to assist in the expulsion of the fetus. They assume every position used in labor and learn how to relax in each. The exercise session lasts 45 to 50 minutes.

After the exercises, the women strip and take an artificial sunbath on an artificial sandy beach for 20 minutes. The beach is a huge heated sandbox large enough for six women at a time. The sun is provided by quartz lamps. To add to the atmosphere, a wind machine is turned on and pine odors are blown into the room! After this, the women take a shower and are escorted into a warm room with couches on which they take a nap before going home.

Conference Rooms

A large adequate room has seen set up for obstetrical society meetings and large conferences and congresses. The library has 80,000 titles and a number of journals—several from the United States. There were photostat copies of the *Journal of the A.M.A.* and copies of our *Journal of Obstetrics and Gynecology*.

Gynecology Operating Room

This operating room had facilities for three operations at one time. Another room was set up for contaminated cases. At each operation, there are postgraduate students, ordinants, and aspirants, with a single senior physician overlooking all the operations. These postgraduates receive training in both obstetrics and gynecology.

Premature and Newborn Department

This department, under Dr. Badyuk, contains beds divided into three wards. Admission is by weight: 1,500 grams and under, 1,500 to 2,000 grams, and over 2,000 grams. Each ward contains five cribs or couveuses (Russian type incubators),

and there are two additional isolation rooms. There is a special six-bed room in which the mothers stay while nursing their infants. The infants are brought to the mothers to nurse, if large and vigorous enough, and the mothers help about the hospital to occupy their time. Normal prematures are examined by a pediatrician once a day. All infants, full-term and premature, receive B.C.G. before discharge.

The hospital which admits no premature infants from outside, has from 300 to 350 a year. With 4,000 deliveries, this gives a prematurity incidence of 7½ to 8 percent. The incidence of prematurity in the U.S.S.R. and in Leningrad for 1954 was reported as 6 percent. The incidence of the U.S.S.R. for 1950 was given us as 4.8 percent. The high incidence in this hospital would probably be explained by the concentration of pathologic cases.

It was difficult to obtain a positive statement on mortality. This was not because of unwillingness on their part but was largely because of problems in communication. Autopsies are obtained on all deaths. They average 120 infant postmortem examinations a year, but this includes both live and stillborns. Also the delegation did not determine if the pathology department gives service to other maternity hospitals in the area, as is common practice in all other cities we visited. Seventy-five percent of the autopsies performed are on premature infants. The principal causes of death were said to be (1) intrauterine asphyxia from complications of delivery, (2) placental complications, (3) erythroblastosis and (4) hyaline membrane disease (in 5 percent of the prematures). Trauma, as a cause, was seldom seen. It was interesting that infection was not mentioned. A maternal death is rare, 1 in 8,000 deliveries.

Department of Non-operative Obstetrics and Gynecology

Dr. Mayzel heads this department, which has 30 beds for pathologic conditions occurring during pregnancy. Patients are referred from many other clinics. The toxemia rate is from 5 to 6 percent and is the main disease treated here. Therapy according to indication includes magnesium sulfate, chlorpromazine, reserpine, and aminozine, intravenous bromide, and salt-free diets.

In the treatment of obstructed fallopian tubes, hydrocortisone, hyaluronidase, and water distention are all tried before resorting to surgery.

Biochemistry and Endocrinology Laboratory

This new laboratory, only 2 years old, is beautifully equipped. A flame photometer is on order and can carry out all necessary clinical determinations. Estrogens are determined by the Browne technique. Gonadotrophin and pregnandiol determinations are also made. It is here that the actinomyosin and ATP content of animal uterine muscle during pregnancy is studied. The director, Dr. Baranova, is specially trained in the chemistry of high-molecular substances.

Embryology Laboratory

The embryo has several critical stages in its development, especially during implantation and placentation. Conditions which may be important causes of abnormalities at this time may produce none later. The ability of the fetus to recover in utero has been studied. Rats were temporarily frozen early in pregnancy and embryogenesis was delayed 5 days. However the fetus at term had caught up to the normal.

Clinical Laboratory on Physiology of the Newborn

The chief of this department is Dr. Vasilyevskoya. Physiological tests to determine early damage to the central nervous system are being studied. Hypoglycemia has been found to be closely related to severe asphyxia. It was more prolonged when also associated with disturbances of circulation of the central nervous system. Because of the close link between diminished oxygen and carbohydrate metabolism, the treatment of traumatized or asphyxiated newborn infants has been revised. These infants are now given 15 to 20 cc of 20-percent glucose intravenously, oxygen and vitamin C. If convulsions are present 1 cc of 10-percent bromide is given.

Staff of Institute of Obstetrics and Gynecology of the Academy of Medical Sciences, U.S.S.R., Leningrad

Director: Professor N. L. Garmasbova.
Assistant Director for Research: Dr. Becker.
Pathologist: Professor Klyapka.
Chief of Obstetrics: Professor Klyenitsky.

Physiology of Pregnancy: Dr. Constantinova.
Assistant Obstetrician: Professor Byeskrovnaya.
Chief, Out-Patient Department: Dr. Sezonova.
Chief, Premature and Newborn Department: Dr. Badyuk.
Chief, Clinical Laboratory to Study Physiology of Newborn: Dr. Vasilyevskaya.
Chief of Nonoperative Gynecology: Dr. Mayzel.
Chief of Biochemistry Department: Dr. Mirobicha.
Chief of Endocrinology: Dr. Ruskin.
Chief, Endocrine Laboratory: Dr. Baranova.
Assistant Chief, Endocrine Laboratory: Dr. Zelyenisova.
Chief of Cytology: Dr. Arsinyeva.
Chief of Bacteriology: Dr. Yegorova.
Chief of Physical Culture: Dr. Startsova.

Chapter 20

Health Education Institute (House of Sanitary Education), Leningrad [1]

Functions of the Institute

This Institute is primarily concerned with providing health information both to physicians and to the general public. It sponsors lectures by prominent professors from cities throughout the Soviet Union. These are presented on radio, television, or in a public auditorium. The varied subject matter includes three main categories: hygiene, sanitation, and epidemiology. The Institute has an interesting medical museum, which contains a puppet theater. There also is a medical library, open to both physicians and the public.

Many pamphlets and books for the general public are published locally and others come from Moscow. This institute publishes a series on child care for ages 5 to 9 months, 9 to 14 months, 14 to 18 months, and 18 months to 3 years. Many posters are printed. They include such messages as "Protect your child from rickets," "Don't cover my face," and "Small objects must be kept from children." There also are circulars on gymnastic exercises for children. Much of the material is free but for some a small charge is made, for "if the mother pays something she is more apt to read and appreciate it."

Subdivision of Moscow Institute

The Leningrad Information Center is really a subdivision of the Central Research Institute for Health Education in Moscow. Moscow gives general directions, and these are adapted by this institution to apply more specifically to local conditions. Many cities and towns have houses of sanitary information similar to this one in Leningrad, and they all take direction from Moscow.

The director of the Leningrad Institute is responsible to the director of the city health department. The Institute has a staff of 10 physicians, two feldschers, photographers, artists, actors for the puppet theatre, and other personnel totaling 42 persons. Each of the 10 physicians has his or her own field of specialization: schools, industry, infant prophylaxis, health education for adults, hospitals, medical museums, etc. Not only the personnel of this house but professors and teachers from the Institutes of Obstetrics and Gynecology and of Pediatrics join in conducting educational conferences in different parts of the oblast for the local population. The district physician may give these talks to various local groups or to mothers in nurseries, kindergartens, or nursing homes. The people are said to appreciate these exercises very much.

"Room for Young Mothers"

Every outpatient department or polyclinic has a "room for young mothers." This idea originated in Leningrad and has now been adopted all over the R.F.S.S.R. Every young mother is sent to this room by her women's consultation clinic. The local House of Sanitary Information is responsible for providing the room with exhibits on maternal and child welfare and reading material on appropriate subjects. Material on the hygiene of pregnancy is available. There are exhibits on clothing, dishes, and toys for children of different ages. There are booklets describing the approved regimen for the upbringing of her child from month to month. The objective is to teach the mother rules for the rearing of her child. Special literature and instructions on proper massage and physical exercises are stressed. Material is given on methods to prevent pneumonia, rickets and other diseases.

Each polyclinic has a daily school for mothers, the course consisting of 12 lectures. The course may be taken by correspondence if the mother is unable to attend in person. The district doctor makes home visits to answer questions and make sure the mother understands what she has read and heard. The doctor must know all the exer-

[1] Visited October 24, 1960.

cises and check to see they are being performed properly.

Material Sent From Moscow

The Central Research Institute for Health Education in Moscow prepares and sends out the materials that will be used in the schools for health instructions. The material is given to the teachers who give the health instructions under the direction of a physician. A class in health education is held at least once a week in school, beginning in the second grade.

Visit to Museum

The delegation visited the museum and found a very good collection of health instruction material. A disease is shown in one panel by cause, in the second panel by symptoms, and in a third panel by prevention. In the museum the delegation encountered an unexpected dividend, for an exhibition of medical and scientific instruments from the German Democratic Republic was just concluding.

Staff of Health Education Institute (House of Sanitory Education), Leningrad

Director: Dr. Sobolevsky (a new appointee; he had held this post only 2 weeks).

Chief of Methods Section: Dr. Olga Lutzernova.

Methods Specialist for Young Mothers: Dr. Grechova.

Chapter 21

Leningrad Medical Pediatric Institute, Leningrad [1]

Functions of the Institute

The Leningrad Medical Pediatric Institute, in addition to the usual functions of the care of patients and research, has the important task of training "pediatric physicians." It also offers postgraduate education for selected pediatricians—through the stages of the *ordinatura* and *aspirantura* to the degree of Doctor of Medical Sciences. The Institute is financed by the Ministry of Health, U.S.S.R., and the program of training and studies it has developed is required throughout the Soviet.

The hospital has approximately 1,090 beds, of which about 890 are for children, including the newborn, and about 200 are for obstetrical and gynecological cases. The usual children's departments are to be found here: premature, neonatal, surgery, skin, nerve, ear, eye, tuberculosis, and infections. There also are departments of pathology and anatomy. The Institute includes a specialized hospital for adults, named Krubachek Hospital, which has departments for surgery, medicine, otology, and laryngology. The Institute graduates from 300 to 400 physician pediatricians a year and has an attrition rate of between 2 and 3 percent.

"Pediatric Faculty"

The "pediatric faculty," the medical school for the 6-year training of "pediatric physicians," has admission requirements of 10 years of primary and secondary education and a unionwide competitive entrance examination. The school has a very large faculty, including several members of the Academy of Medical Sciences. Professor M. S. Maslov and Professor A. F. Tur have special departments. The faculty, as reported by Renate Bunge (*Gesundheitsschutz in der Sowjetunion*, Volk und Gesundheit, Berlin, pages 201–227, 1955) is composed of the Scientific Council of 40 professors, under the chairmanship of the director. The director has four deputies: (1) for the scientific section; (2) for teaching; (3) for clinical matters; and (4) for administration. There are 190 lecturers and assistants, 100 other physicians, 300 nurses, and 400 ward aides. Three members of the Institute are on the editorial board of the Soviet Journal *Pediatriya* (Pediatrics).

The medical students study the usual basic subjects in the first two years: biology, anatomy, histology, pathology, physiology. The students in pediatrics study the anatomy and physiology from infancy through the adult life, in contrast to the concentration on the adult given in the medical training provided by the "therapeutic faculty." In addition to theory, all students receive some practical experience in outpatient and other departments as junior physicians. In the third year, emphasis on pediatric training begins with nutrition. Practical work continues, with the students acting as nurses or medical assistants. In the fourth year, students have 2 months of their 3-month summer "vacation" spent in practice as physicians under a senior doctor. The fourth year is devoted to adult medicine, including surgery, obstetrics, and internal medicine. In the fifth year of training, lectures and seminars concentrate on pediatrics. Actual pediatric practice takes place under the direction of a senior doctor chiefly in outpatient departments and consultation clinics. About 3 hours a day are devoted to lectures and seminars and another 3 hours to practical experience. The sixth year is one of pediatric practice and includes experience in infectious disease and surgery. The school year is divided into two semesters: the first 18 to 19 weeks followed by an examination and a 2-week vacation; the second 13 to 16 weeks, followed by 8 weeks of practice and 8 weeks of vacation. Through the entire 6 years, a fixed number of hours are devoted to nonmedical subjects. All must continue studies

[1] Visited October 22, 1960.

in a foreign language, in one "cultured" subject, and of course in the Marxist-Lenin doctrine.

Must Take State Examinations

Each year the student is given oral and practical examinations. At the end of the sixth year, the student must take state examinations that cover pediatrics, surgery, internal medicine, infectious diseases, hygiene, gynecology, obstetrics, and the organization of public health. These are the same for the entire U.S.S.R., and on passing, the student receives a diploma as a pediatric physician. Each year the Soviet Union graduates more than 3,000 pediatric physicians.

The average age of a student on entering medical school is between 19 and 20 years. Education is free to all. In addition, many of the students receive a scholarship or stipend. Students must pay their board and room, and hostels are provided for students from other cities not able to live at home. Stipends are, in the main, rewards for excellence of performance but are also given to any student who is in need.

Evening Medical Courses

The Institute also has an evening medical school, which permits the qualified student to work and at the same time study. These students receive exactly the same training and the same degree, but it takes about 6½ years to graduate from the evening department. Evening courses also are available for those with some previous medical experience, such as midwives and feldschers and the same 6½ years is required of this group regardless of previous training.

Program Prepared Each Year

The Ministry of Health of R.F.S.S.R. prepares a program annually for each of the 6-year graduates. The student is sent for a 3-year period to an oblast in Russia where there is a need and there carries on duties under the direction of the district pediatrician. Seventy percent of the graduates of the Institute are women. If a woman graduate is married and has small children, the Government takes these facts into consideration and she is not assigned a remote area but rather to a central area or one near her husband's place of work. Instead of being assigned to a remote oblast, a qualified student may take a 2-year advanced course in pediatrics and on graduation is an ordinant. As such, he qualifies for a more responsible clinical position and receives a larger income.

A student aspiring to an academic career, if very superior and recommended by the faculty, may go directly from the 6-year course into the 3-year *aspirantura* training. The graduate ordinant may apply for training as an aspirant. To graduate as an *aspiranteur*, the candidate must write and defend a thesis. If successful, he becomes a Candidate for a Doctor of Medical Sciences. To achieve this degree, he must pursue independent and original research and defend a thesis based upon it. This process takes at least 6 additional years. The average age of a candidate achieving a Doctor of Medical Science degree is 40. These are the future professors and possible candidates for the Academy of Medical Sciences. This Institute has 110 physicians studying as ordinants. Approximately six are in obstetrics and gynecology, and the rest are in other specialties. In the entire Soviet Union, there are relatively few who train as ordinants and very, very few who qualify as aspirants. The number of physicians permitted the opportunity to take advanced training is predetermined by the Ministry of Health.

If, after the 6-year course, students wish to specialize in obstetrics and gynecology, they take the 2-year *ordinatura* program in this field. Similar *ordinatura* training is available in other specialized fields if the Ministry of Health has established the need for that specialty.

Premature Unit

Professor A. F. Tur, AMS, discussed the problems of the prematurely born infant and conducted us through his premature unit. There were 20 beds available, but after the reconstruction in process there were to be 30 beds. In addition, it was planned to have 12 beds for mothers nursing their infants. At the time of the delegation's visit most mothers came in during the day to nurse their babies; some stayed all day to help in the hospital. Even after the reconstruction, this program was to continue.

Dr. Tur first talked to the delegation in a small anteroom adjoining the nurseries. One could see into the nurseries through large glass windows. This anteroom was where student teaching took place. Students are not allowed in the nuseries and must watch demonstrations through the windows. The walls were covered with teaching charts. On exhibit was an album of small baby

graduates (before and after pictures), also a premature ambulance equipped with hot water bottles but no oxygen. On the wall were pictures of three illustrious prematures, Handel, Rousseau, and Victor Hugo.

Professor Aleksandr Fyodorovich Tur, active member of Academy of Medical Sciences, U.S.S.R., and chief of the Department for Premature Infants and of the Physiological Department, Institute of Pediatrics, AMS, Leningrad.

Premature Labor Cases

Leningrad does not collect its premature labors in one hospital as is done in Moscow. This Institute, whose obstetric department provides 40 percent of the admissions, has an incidence of prematurity of between 5 and 6 percent. The remaining 60 percent is admitted from other maternity hospitals, with an average age on admission of from 8 to 9 days.

Prematures are not admitted earlier because all infants of over 1,500 grams are put to breast routinely and so stay with the mother in the maternity home until her discharge. If the infants are under 1,500 grams, and can suck and swallow, they are given breast milk from a bottle. If under 1,000 grams or weak, they are fed breast milk (from the mother) by gavage. In any event, the mother and infant stay together until discharge.

On special occasions, if a premature labor is imminent and the conditions in the maternity home unfavorable, the mother may be sent here or to the Institute of Obstetrics and Gynecology for delivery. In general, only prematures of 2,000 grams or less are admitted although on occasions they may weigh more. They may stay 2 to 3 months or until they are approximately 4 kilograms.

All small prematures are said to receive 35-percent oxygen except at feeding times. There are no instruments to actually measure oxygen content and the amount is regulated by the flow per minute. However, oxygen is administered within a plastic dome. There is no closed chamber incubator, and the amount of oxygen the infants receive is probably insignificant. They have never seen a case of retrolental fibroplasia. Dr. Tur, who is certainly one of the outstanding authorities, told us the incidence of the hyaline membrane syndrome is very low in the Soviet Union as compared to the United States. Both he and others questioned think it affects only about 5 percent of prematures.

Mortality Rate

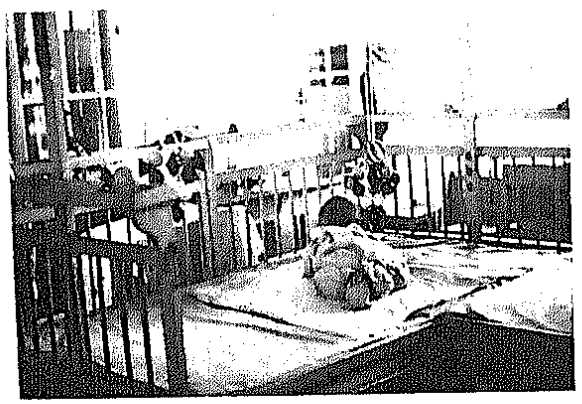
This hospital's mortality rate for full-term infants is 1 percent (10 per 1,000). The delegation also was quoted an amazingly low premature mortality rate of 2.3 percent! However, this latter figure is difficult to compare since it includes both the 40 percent admitted at birth and the 60 percent that are the 8- to 9-day of age admissions. An infant of 1,000 grams and under, dying in the first week, is called a fetal death and is not reported. The definition of prematurity is not on the single category of a birth weight of 2,500 grams or less. The delegation gained the impression that each infant was considered individually, and that on the basis of gestational age, weight, and length, might or might not be called a premature. Also to be a live birth, an infant must breathe—a child not breathing is a stillbirth. Stillbirths are divided into (1) antepartum deaths, (2) death during labor, and (3) those born with a heartbeat or muscular activity but who do not breathe.

The Premature Nursery

The Soviet version of an incubator is called a *couveuse*. This has a thermostatically controlled, built-in electric heating element and, suspended on a right-angle bar over the crib, is a radiant heat device. When an infant requires oxygen, a plastic dome covers the top of the incubator. Several

nurseries are available for the low-weight and sick prematures. Two prematures with pneumonia were seen in one nursery. The nurseries had primitive hand-washing facilities: one wash basin for a group of approximately six infant beds with no elbow or foot control and a common hand towel. The isolation ward of four closed cubicles had only one hand-washing facility and this was outside the cubicles. The attendant goes freely from one cubicle to the other without washing hands or changing gowns. Very complete and elaborate charts were kept on each premature and here, as everywhere in the Soviet Union, the delegation was amazed at the quantity of personnel available: doctors, medical assistants (nurses), and ward aides.

Older prematures and other infants are placed in cribs in cubicles in an attractive, large nursery. Elevated, waist-high playpens occupied the center of the room in which babies from 2 months on



s, Leningrad, a 6-month-old
ı one of the practical, waist-
rful nursery for older pre-

ducted (1) on the development of the central nervous system (they believe the normal development of the brain demands multiple conditioning stimuli at an early age); (2) on the use of the ionized milk developed by Professor Elena N. Khokhol, AMS, that is said to remove the ash and change the calcium and phosphorus content to that approaching breast milk; (3) on methodology to improve neuromuscular activity; and (4) on cytomegalic inclusion disease. In the past 2 years, 10 children have died in this Institute, including 2 premature infants, from this condition. They suspect a number of viruses may be involved.

Department for Healthy Children

This department can accommodate 29 children, but there were only 19 at the time of the delegation's visit. Almost all children are admitted because the mother has died and the father is working or is a student and unable for the time being to care for the child. A few children are admitted at the parents' request and for various reasons. Children are admitted from the age of 2 weeks and may stay until they are 3 years old. In this laboratory of growth and development, detailed regimens of life for all children are developed according to age. The recommendations of this department become the methods of care for all nurseries in the Soviet Union. There is a ratio of one nurse to every six or seven infants. Each nurse is assigned a child during its stay in a particular group and gets to know him very well. The nurses appeared to be very attentive and very loving with the children, who are divided and studied in three groups: 2 weeks to 9 months, 9 to 18 months, and 18 months to 3 years. Bedrooms for the older children are separate from the playroom, but the infants sleep in cribs around the sides of the room. The center of the infants' room is occupied by a series of table-height playpens, arranged in horseshoe fashion to allow efficient handling of the children by a nurse in the center position.

Every moment of every day is planned according to the child's age. A child may have his daily regimen charted at the foot of his bed, or a group may have the same schedule posted elsewhere. Sleeping hours are charted in blue, working in red, and feeding times in black. The children sleep outdoors in the garden in summer, except in bad weather. In the winter, they sleep indoors with windows wide open.

Attention Paid Psychological Development

Every effort is made to devise a way of life that will avoid the development of hospitalization psychic disorders. This explains the detailed attention to the physiological development of the child, with great emphasis on diet, exercise and sleep. At 2½ months, exercises and play periods begin. The nurse shows toys and speaks to the infant to "stimulate the second signal system." Playthings and exercises are introduced according to the child's age. Children are given the opportunity to hand-feed themselves with *kasha* (cereal) from the fifth month. They receive natural vitamins, vegetables, fish oil, and yeast.

A nurse gave a demonstration of the exercises on a 6-month infant. The nurse established a very close and warm contact with the baby, who was obviously enjoying himself. The exercises for each group have been described and illustrated in detail in a booklet given the delegation. The exercises for the 6-month child occupy 8 to 10 minutes once a day, usually between 9 and 10 a.m.

Professor Tur has nurse demonstrate conditioning physical exercises given a 6-month infant. Other phases of the exercises are observed in the photographs on the wall. Institute of Pediatrics, Leningrad.

The delegation was given a demonstration of the exercises of older children. Three young gymnasts, almost 3 years old, came marching in, hands on each other's shoulders. They were dressed in attractive uniforms. Under the nurse's direction, they went through a number of rather elaborate exercises. Most of these youngsters were very obedient and quiet and obviously enjoyed themselves, although one little girl was quite tense and a little concerned about her performance. Professor Tur developed the various systems of exercise and published a book on the subject in 1938. His methods are used in all nurseries, kindergartens, and children's homes. His system is also part of the training given nurses and ward aides.

Therapeutic Department

The Therapeutic Department is under the direction of Professor M. S. Maslov, AMS, who was ill at the time of the delegation's visit. Professor Tur graciously conducted a tour. This department, with 50 beds, treats noncommunicable diseases in infants and children up to 15 years of age. There are wards for infants and for older children. The delegation was shown an infants' ward with 14 closed cubicles and containing patients suffering from such illnesses as pneumonia, otitis media, nutritional problems, hemolytic anemia, and chronic sepsis. Intestinal diseases are sent to a separate ward. Ten cubicles had two infants each, and there were four cubicles with one pneumonia patient each. There were no hand-washing facilities in the cubicles and no separate gowns. There was one nurse for every seven patients but the mothers came in to help. Two nurses were on each 6-hour shift.

Older boys and girls have separate wards and recreation rooms. Schoolwork and craftwork are provided for children who stay in the hospital for long periods. The delegation was shown a large attractive teaching room with desks for 20 medical students arranged around an outer circle. In the center was a demonstration table. Four fifth-year pediatric students were busy studying patients' records.

Professor Tur said that all deaths in this Institute are autopsied. No parental permission is required. If parents should oppose the examination, it can still be done. Main causes of death in the premature infants are trauma, congenital malformation, and hemolytic disease. Hyaline membrane syndrome is said to be rare.

Obstetric and Gynecologic Department

The department of obstetrics and gynecology, which has 3,000 deliveries a year, has eight-bed labor rooms and three- and four-bed rooms for second stage and delivery. Adjoining the delivery rooms is a "minor surgery" section, where patients are taken for the repair of episiotomies and tears. As much as 1 hour may elapse between the delivery and repair. The incidence of episiotomy was given as 10 percent; of forceps, 0.5 percent; and of

vacuum extraction 4 percent. Pudendal block is used for repairs and in a "few" other cases. It is sometimes, but not always, used for episiotomy repair. The dividing bed seen in Moscow is not used. Either "Professor Ortez" leg holders, which support the popliteal space, are used or attendants hold the patient's legs.

There is a recovery room for the newborn, and oxygen is administered through a funnel held near the face. No oxygen masks or closed oxygen chambers were available. As in other institutions the labor, delivery, and newborn rooms alternate with a second set every 8 to 10 days. Apparently the closed room is left alone and is aired. There is no sterilization or painting. The latter is done every 14 months. Post partum roms are filled by the day of the week in rotation. The incidence of eclampsia is less than 7 per 10,000. All types of toxemia occur at a rate of 6 percent.

A premature infant is kept on the obstetric service with the mother for the purpose of breast feeding. However, if a premature infant does not gain, he is transferred to the regular premature nursery. A common dining porch is used for meals and for classes. The ambulatory patient gets her own tray. Dr. Bunge reports that the tasks and research program of this Institute are proposed by the individual departments and submitted to the Institute's Scientific Council. If the Council approves, the program is submitted for confirmation by the Ministry of Health, U.S.S.R. The Institute issues methodological instructions to specialized departments and to pediatricians working in rural areas or small hospitals.

Staff of Leningrad Medical Pediatric Institute, Leningrad

Director: Professor A. F. Tur, AMS, U.S.S.R.
Assistant Director: Dr. Gavrilov.
Director, Clinic for Noninfectious (Somatic) Diseases: Professor Maslov, AMS, U.S.S.R.
Director of Health and History of Medicine: Dr. Sinovska.
Director of Pediatrics Units: Dr. Kobaseva.
Chief of Obstetrics Department: Dr. Victor Gregovich Butomor.
Chief of Methods Department, Leningrad City Department of Health: Dr. Zhamgorva.
Chief of Children's Department, Leningrad City Department of Health: Dr. Smirnova.

Chapter 22

Children's Hospital of Smolny Rayon, Leningrad [1]

This hospital, used as a teaching unit of the Institute of Pediatrics, has both an inpatient service with 150 beds and an outpatient department with 35,000 patient-visits a year. The premature department, which receives infants referred here from other maternity homes, has 30 beds and from 180 to 200 admissions a year. There are two therapeutic departments, with a total of approximately 120 beds, to serve the rayon children. The endocrine department of 40 beds originally received referrals from the Leningrad area, but now has become so well known that cases are sent here from all over the Soviet Union.

The Smolny Rayon has a population of 14,000 children under 15 years of age. To care for the medical needs of these children, there is this hospital, another children's hospital of 600 beds, and the Institute of Pediatrics. The rayon is divided into 16 different districts. Each district has its own doctors and nurses permanently assigned to the area. They get to know the families intimately and are their advisers in many problems of life.

The Promature Infant Unit

Premature infants admitted to this unit are between 15 and 30 days old and their maximum admission weight is rarely over 2,000 grams. The infants have stayed at the maternity home where delivered until the mother is discharged. Since it would be unwise to send the smaller infants home, they are admitted to this ward. The mothers who come in during the day to nurse and give other care go home at night. The unit has four sections with from 6 to 10 cribs each. One of these is reserved for babies above 2,500 grams. Another section for the smaller infants is filled and then no more admissions are made until all are discharged and the room closed and cleaned. When the section is ready to receive again, the maternity homes are notified and the proper number of prematures awaiting their turns are admitted.

[1] Visited October 25, 1960.

There are four nurses around the clock for 30 infants. The nurses work 12-hour shifts and have the next day free. Pediatricians examine the infants daily and a pediatrician is always on call. Every effort is made to have the infant nurse, but if this is not possible, breast milk is provided. Pumped milk is received into sterile bottles and no further sterilization takes place before feeding. Artificial formula, tea, and water are said to be terminally sterilized, but the delegation could not discover the method. Although our interpreter said the autoclave is used, an inspection of the small, antique autoclaves made this seem unlikely.

No Premature Deaths Reported

The delegation was informed that no premature death has occurred in 2 years and that only a very small percent of infants have diarrhea. The main problems are respiratory disease, pneumonia, and "grippe." Sick infants are given gamma globulin; the healthy are not. Prophylactic antibiotics are given infants delivered after premature rupture of the membranes.

An interesting study is in progress involving a 3-year followup on premature infants of a birth weight of 1,000 grams or less. Fifty children are being followed every month up to 1 year of age and twice a year thereafter. So far, one child has been diagnosed as having Little's disease, and there has been no evidence of hearing defects.

Physical Setup Typical

Both the physical setup of the nursery and the nursing care were typical of what had been seen earlier in Russia and what was to be seen duplicated in many hospitals. Smaller infants are kept in *couveuses*, the Soviet incubator, made in Kharkhov 7 years ago. The larger babies in cribs are kept warm by several hot-water bottles. The nursery is a large room with a common vestibule across one-third of it. The remaining area is separated into three nurseries by glass partitions.

There are no washing facilities in any of the nurseries. Instead, there is a wash basin with running hot and cold water in the anteroom, hand controlled spigots, soap, and a common bath towel. There is a large metal tank and hand spigot. It is filled with water at the proper temperature and after bowel movements the infant's buttock is held under the spigot and rinsed off with running water. Then the baby is taken to a common bathing table for diapering. There is presumably an antiseptic solution used to wash the plastic top of the bathing table and the hot-water bottles. Two nurses that police all three nurseries were constantly on the move. They wore no mask and no gown over their white uniform but they wore wristwatches. They moved from crib to crib, handling babies and adjusting covers. Finding a hot-water bottle cool, the nurses take it into the anteroom, fill the bottle and return. There is no personal handwashing at any point. A number of flies were observed in all nurseries and in the anteroom.

The fourth ward is a large 10-bed room for infants above 2,500 grams and for older infants. Prematures are graduated into this nursery which has very attractive tabletop playpens adorned with bright colored toys. On these, infants from 2 months on, or 2,500 grams, receive the prescribed massage, exercise and play regimens.

Virus Infections Studied

One medical or therapeutic department is studying adeno and Coxsackie virus infections. The other therapeutic department specializes in influenza (grippe) infections and other respiratory infections. They receive infected newborn, small and larger children. Each ward is filled over a short period, and then no new admissions are permitted until all patients are discharged and the ward cleaned. The physical and hygienic setup is the same as described above. Many cases of the A_2-Type influenza are encountered. Convalescent serum and gamma globulin are used in treatment. (They are also used for the adeno and Coxsackie infections.) Alternate cases are being given gamma globulin or convalescent serum, but no results of this study were available. Everywhere the delegation was told of the seriousness of respiratory infections and influenza as a cause of morbidity and high mortality in Soviet children. It is one of their most pressing problems. On questioning, the delegation was told that cystic fibrosis of the pancreas is not recognized in Russia and not described in Soviet literature. Diphtheria has all but disappeared; there were 22 cases reported (all in adults in Leningrad in 1959). Whooping cough is becoming rarer. To date in 1960 there were 11 cases, 3 or 4 of which had all 3 inoculations. The cases, however, were very mild. There has been no recent scarlet fever.

The endocrine department had 40 beds, all occupied with cases of diabetes, myxedema, thyrotoxicosis, hypopituitary disease, Simmonds' disease (secondary adrenal cortex insufficiency). A school program is carried out in this department since with these chronic diseases the children are kept for prolonged periods. As stated earlier cases are sent here from all over the U.S.S.R.

Outpatient Department

The outpatient department is primarily for healthy children or those who have been in the hospital and need followup or a certificate to reenter nursery, kindergarten, or school. Infants are seen monthly for 1 year, every 3 months in the second year, twice in the third year, and once a year thereafter. Mothers are given information on the proper care and upbringing of the child at various ages. The feces are examined for worms, urine is analyzed, blood tested, and any other laboratory examination that is indicated is made. At 7 years, all children have a routine chest X-ray. Immunizations are given at the proper times. A visiting nurse (medical assistant) follows the children at home.

Staff of Children's Hospital of Smolny Rayon, Leningrad

Director: Dr. Friedland.
Assistant Director: Dr. Ederson.
Chief of Newborns: Dr. Prostikova.
Chief of Endocrinology: Dr. Knyazevskaya.
Chief of Viral Diseases: Dr. Klibanova.

Chapter 23

Ukraine Ministry of Health,[1] Kiev

Organization

Although the Ukraine Ministry of Health is under the political control of the Council of Ministers of the Ukraine Republic, it receives methodological directives on health matters directly from the Ministry of Health, U.S.S.R.

The Ukraine Ministry of Health, responsible for protecting the health of the people in the U.K.S.S.R., has three deputy ministers. One is in charge of medical statistics, clinical and prophylactic medicine, including that used by sanitoriums, hospitals, polyclinics, and drug stores. The second deputy minister is in charge of sanitation, epidemiology, construction, medical industries, medical equipment and supplies, and accounting of services. The third deputy minister is responsible for the training of physicians in medical institutes, for medical publication houses, and is the director for personnel.

Heads Two Divisions

The minister of health personally heads two divisions:

1. The department for planning and developing the network of medical institutions and for financing the health services and facilities. (All public health is planned by the state; one section of the republic cannot be treated more favorably than another.)

The Supreme Soviet of the Republic determines the budget for all, and the Ministry of Health determines the distribution of health services and facilities in the oblasts. The oblast's Department of Public Health allocates funds—within the oblast—to cities and rayons.

2. The Department of Maternal and Child Welfare, which reports directly to the Minister and as a result has a high position in the structure of public health. The Director of Maternal and Child Welfare also is a member of the Collegium and has charge of all children's hospitals, sanitoriums, children's consultation clinics, crèches, kindergartens, and school health.

Raïsa V. Medyanik, director of Maternal and Child Health, Ukraine.

The Minister of Health is assisted by a Collegium of the Ministry consisting of seven members. There also is a scientific council that plans, organizes and controls scientific investigations. It is the duty of this council to know acute health problems, which ones are being investigated, and where these investigations are being conducted. The council must see to it that there is no duplication of investigative efforts at the expense of having some pressing problem neglected.

15 Medical Schools in Ukraine

There are 15 medical schools in the Ukraine, 7 of which are for the exclusive training of pediatricians. The Ukraine is divided into 25 oblasts (1 to 2 million population each), and each oblast has its own Department of Health, responsible on health matters to the Ukraine Ministry of Health and on political matters to the oblast's executive committee or to the Soviet.

[1] Visited October 27 and 31, 1960.

The Director of Public Health in the oblast has four assistants, each with definite responsibilities: (1) medical administration in rayon hospitals; (2) hospitals, maternity homes, consultation clinics and dispensaries; (3) sanitary and epidemiologic problems in the rayon; and (4) personnel.

Political Bodies Have Power

Actual power resides in the political bodies. The Oblast Executive Committee "submits" to the Republic Council of Ministers, which in turn "submits" to both the Supreme Soviet of the Republic and to the Council of Ministers of the U.S.S.R. The Council "submits" to the Supreme Soviet.

In each oblast, the Executive Committee of Soviet Deputies is elected every 2 years. With its departments of public health, people's economy, industry, agriculture, education, and culture, it directs the entire life of the oblast.

The organizational structure in the rayon recently had been changed. Now, instead of a Department of Public Health, the rayon has a rayon hospital, and the hospital's director is responsible for all aspects of public health in the area.

Philosophy and Results

All births in cities are in maternity hospitals except for the occasional instance of a delivery before the mother can get to the hospital. In villages, 98.3 percent of births were in maternity homes in 1959. If the mother delivers at home, she may be taken to the maternity home or a hospital after delivery.

Stillbirths in 1959 constituted only 1 percent of all pregnancies. (Definition of stillbirth excludes those births under 1,000 grams, under 28 weeks' gestation, or under 35 cm. in length.)

Eclampsia was observed in 2 per 1,000 live births in the cities and 5 per 1,000 in the villages. Prematurity has declined 2.5 times in the cities since 1945 and 3 times in the villages. There are special wards for premature infants in certain hospitals of the large cities. In 1959, the Ukraine's rate of prematurity was 3.9 per 1,000, and in the City of Kiev, it was 4.7. The mortality rate of prematures is approximately 6.8 percent.

Maternal mortality has practically disappeared. The decrease in mortality from a rate of 100 per 10,000 live births in 1913 underscores the improvement made in obstetrics service and maternal care. These causes for the remaining maternal mortality are given in order of importance: hemorrhage, extra genital factors, eclampsia, rupture of uterus, sepsis. In 1959, a total of 85 percent of women delivered had successfully used the psychoprophylactic lessons.

Care of Infants

Each pediatrician serves approximately 800 children. Three nurses are divided among every two pediatricians to help supervise the health of the children. Children are visited at home within 3 days of discharge from the maternity home and once a month thereafter if they do not come to the polyclinic. All newborn children are vaccinated with BCG.

There is emphasis on breast feeding. In 1959, only 4.5 percent of the infants were given artificial or nonhuman milk. In addition, another 6.3 percent had breast milk plus a milk supplement from nonhuman sources. All others were either breast-fed or fed with freshly drawn human milk.

Infant mortality has decreased 31 percent during the last 10 years. In the better oblasts, the rate during the last 6 months has been from 22 to 28 deaths per 1,000 live births. (The rate during the last 6 months is not representative of what it would be on an annual basis because it omits fall and winter diseases.) The main causes of neonatal mortality are influenza and pneumonia, followed by diseases of the newborn characteristic of prematurity.

In 1959, the incidence of all childhood diseases had declined 21 percent since 1953. (Reason for choosing 1953 as the base year was not clear.)

Nursery and Kindergarten

There is a nursery for healthy children from ages 3 months to 3 years. After 3 years, and up to 7, the children are in kindergartens. In 1959, some places started a combination nursery-kindergarten but children are still separated by age so it makes little difference. Some children stay in a nursery or kindergarten 8, 10, 12, 14, or 24 hours, depending upon the working circumstances of the mother.

The number of children in nurseries has grown rapidly. There were in 1913 no children; in 1940,

154,774; in 1944–45, 59,513; in 1950, 119,110; in 1955, 137,753; in 1959, 177,219.

The number of children in kindergarten in 1959 was 330,000, with a total of 507,000 children in kindergartens and nurseries combined. By 1965, places for an additional 607,000 are being planned.

Each kindergarten and nursery has a doctor and nurses. There is 1 doctor for every 80 healthy children.

In view of these new demands for facilities which will take more and more doctors, the total number of *new* doctors will exceed 100,000 for the 5-year period from 1960 to 1965. Of this group, a greater percentage than in the past will be pediatricians. The increase in pediatricians will reduce the proportion who enter the general practice of medicine.

(See tables 1 and 2 for statistical data.)

TABLE 1.—*Number of health facilities, Ukraine S.S.R., 1913–60*

[(—) indicates figure was not available or not reported to the team]

Year	Total hospital beds [1]	Collective farm maternity homes [2]	Beds in maternity homes	Beds for special problems in gynecology	Beds for children in hospitals	Rural health stations under care of feldshers	Maternity consultation clinics	Children's polyclinics	All outpatient clinics and dispensaries
1913	47,717				0	984		3	
1940	160,003	3,257		7,523	13,606	8,869	888	1,262	
1944–1945	(3)	720		4,020	8,099		996	1,008	
1950	194,223	4,845		9,379	17,624	11,912	1,298	1,319	
1955	248,000	6,044				13,828			
1959		7,374		17,293	30,009	15,961	1,486	1,564	
1960	310,000		20,000						4,139

[1] Does not include beds in nurseries, kindergartens, and sanitoria.

[2] Each maternity home has three to five beds. The first collective-farm maternity home was opened in Ukraine S.S.R.

[3] Figure could not be deciphered but it was the lowest for that decade.

TABLE 2.—*Number of health personnel, Ukraine S.S.R., 1913–59*

Year	Medical Doctors	Pediatrician-physicians	Obstetricians and gynecologists	Feldshers, midwives, and other medical workers
1913	6,571			10,000
1940	33,049	3,801	2,201	101,991
1944–1945		1,979	1,370	50,274
1950	48,026	5,132	3,120	136,397
1955	60,809			
1959	[1] 70,000	9,537	4,899	255,000

[1] About ½%, or 400, of these doctors hold the degree of Doctor of Medical Sciences. About 4%, or 2,850, hold the degree of Candidate of Medical Sciences.

Chapter 24

Institute of Infectious Diseases, Academy of Medical Sciences, U.S.S.R., Kiev [1]

Professor Ivan L. Bogdanov, who speaks English, conducted his discussion in Russian. He attended the U.S. Public Health Association meeting in Cleveland in 1957 and visited Johns Hopkins Medical School. Professor Bogdanov is well acquainted with many U.S. scientists in the field of virology and has been visited by a number of them. He maintains close contact by correspondence with colleagues in this country and receives regular *Poliomyelitis Surveillance Reports* from the U.S. Public Health Service.

Functions of the Institute

This Institute, part of the Academy of Medical Sciences, was organized in 1949. It concentrates on three main problems: (1) grippe, influenza, and influenza-like diseases; (2) infectious hepatitis; and (3) poliomyelitis. The Institute operates as a hospital giving clinical care and uses its material as the basis for many research laboratories. The clinical department consists of sections for grippe and influenza (40 beds); infectious hepatitis (25 beds); poliomyelitis (60 beds); a dispensary and polyclinic permitting followup studies; epidemiological section and a diagnostic laboratory. Beds in other hospitals are also under the control of this institution. The laboratory departments are studying poliomyelitis, influenza, and hepatitis, and have available pathomorphologic, radiologic, biochemical, and biology laboratories. There is an animal house and an experimental and technical shop.

Poliomyelitis

Poliomyelitis investigations began in the second half of 1956 with the principal task to define the types of the disease. Prior to 1961, there were relatively few sporadic cases of this disease, but a marked upsurge was observed at that time. Virus studies showed that in 1956, type I was found in 70 percent of cases; type II, 18 percent; and type III, 12 percent. Each subsequent year the incidence of type I decreased and type III increased to 40 percent of cases in 1959. Since type III was found to be a less severe disease than I or II, the Russians question whether the improvement may not be the result of the shift in type rather than the result of the vaccination program.

They have studied the length of time that virus could be recovered from the stools and pharynx. The studies covered the hospital period and 1 year after discharge. Results have been published and the delegation given a reprint.

In recent years the cases seen have been mild and possibly have been associated with the immunization program. In the first 6 months of 1960, a total of 13,000,000 persons ranging from approximately 2½ months to 25 years of age have been vaccinated in the Ukraine. The Sabin live virus has been the immunizing agent.

In 1956, the republic organized a Committee on Poliomyelitis to coordinate all work and writings on this subject. This Institute cooperated with the committee by writing a book entitled *Poliomyelitis*, a copy of which was given the delegation, and by organizing many conferences. The Ministry of Public Health set up a Special Department for Poliomyelitis to deal with organizational problems and to set up respirator centers.

The Ministry of Health organized a netw
of beds necessary for the treatment of r
elitis patients. In the past, patients
charged 40 days from the onset and w
a medical department for rehabilitation
As a result of its research this Institu
veloped a method of care they believe
results and have recommended its
adoption. The patient is now kept 8 t

[1] Visited October 27, 1960.

in the original hospital where treatments are given. After this time, he is sent to a sanatorium for further treatment. In 1959, the mortality rate in poliomyelitis was 2.1 percent, and 80 percent of the fatal cases were paralytic.

The treatment recommended is activity from the beginning. Cortisone is given in the early stages, especially in the meningeal form. Hyperimmune gamma globulin, with an antibody titre 20 to 30 times normal is used in the first days of the disease. Human gamma globulin is used to avoid serum sickness, the incidence of which was 2½ percent. There was no hepatitis encountered.

Cases of poliomyelitis were observed in vaccinated as well as unvaccinated individuals. The overall incidence of the disease has decreased 2½ times, in the last 2 years. Of the poliomyelitis cases, 1.5 to 1.8 percent were adults, but there was no special predilection for pregnant women. Professor Bogdanov said he had seen only one case of polio in pregnancy and that it was not a problem in the U.S.S.R. The incidence of poliomyelitis is lower in the Ukraine than in the rest of the U.S.S.R.; 9 per 100,000 in 1956. The incidence for Denmark was 106 per 100,000 and that for the United States in 1952 was 37 per 100,000.

Influenza

Influenza is a most important problem in the U.S.S.R. It is being studied from different aspects, especially epidemiological and therapeutic. B_2 form has been the most common type in [illegible] years. There has been a recent study by Maksimovich demonstrating the transmission of the virus.

[illegible] serum is being used as a prophy- [illegible] children and is also used in [illegible] complicated by pneu- [illegible] stered. The mortality [illegible] only one death in 1,900 cases in 1958.

The problem of immunizing children against influenza is under continued study. The U.S.S.R. has had no experience with killed vaccines; however, there are limited studies underway on immunization with attenuated viruses in the adult—but not in children, as yet. An attenuated virus vaccine is being prepared for wide use. The possible relationship between influenza infection early in pregnancy and the development of congenital malformations in the fetus is being studied.

Professor Maksimovich described her work on the viral infection of pregnant mice and on humans. The mice were infected intranasally with influenza virus and at delivery three of six fetuses were infected and the virus recovered, while three were not infected. In the pandemic of 1957–58 she collected 90 human fetuses and newborns from various institutions, and from 11 the virus was isolated. None of these had clinically recognizable influenza, two were stillborn, two were full-term, and seven were premature. The nine liveborn died between 2 and 48 hours of birth. Some of the infants from whom virus was recovered had been isolated from the mothers from birth, suggesting an intrauterine infection—of the 90 studied, the usual causes of death were found, asphyxia, trauma, malformations, etc., but no mention was made of evidence of infection.

Professor Maksimovich reasoned that the fetus is usually not infected with influenza due to the transplacental transfer of antibodies. However, the protection afforded depends on the mother's antibody titre and the intensity of her immunity and in pandemics a low level of maternal antibody could be expected to be associated with a high fetal and neonatal mortality. She suggests that vaccination of the pregnant woman might improve the transferable immunity and improve the infant's chance to survive.

Hepatitis

Infectious hepatitis is being studied only in adults. The infection has been found in animals and it is believed some human cases have been traced to contact with dogs.

The delegation visited the 60-bed polio ward and saw 35 children with extensive paralysis and 17 children with encephalitis and meningitis.

In the virus laboratory a nursery epidemic caused by influenza A virus that was traced to a nurse was described. In another section adenoviruses were being isolated with type three the predominant one, although types four and seven were also encountered. Another laboratory isolates the three types of polio viruses: Coxsackie and echo viruses one and nine. The tissue cultures are grown from monkey kidneys from monkeys raised in Moscow.

There was a laboratory for electromyelography and studies on the changes in the biopotential of muscle in polio and in Coxsackie infection.

A gymnasium is available for all types of physical therapy.

The most amazing experience the delegation encountered on the Soviet visit occurred in a mystical laboratory devoted to the treatment of paralysis and the relief of body pain through an elaborate routine and ritual associated with needle punctures called acupuncture. Professor Bogdanov had referred to this method earlier as a means of treating the paralysis of poliomyelitis. A member of the staff had been sent to Communist China twice to learn the method in Nanking, acupuncture being an old and time-honored method of therapy in China.

The human body is divided into 690 points, arranged in 14 longitudinal lines, 12 of which are symmetrical—one midline front and one midline over the spine. The human ear is a reversed image of these points; the top of the ear has points corresponding to points on the legs. There are three points in the middle of the ear that correspond to the tonsils; the tip of the ear has points of the eyes and ear. The "physician" has a small radiolike device with an ear plug which fits into his ear; the instrument has a pinpoint divining rod. The patient holds an electrode; the "physician" inserts the divining needle into various parts of the ear and knows he has found the part of the body needing treatment by a certain sound he detects through the ear plug. After he finds this spot, treatment is ready to start. The treatment can either excite or inhibit.

In the inhibition method, long sterilized gold needles are plunged into the muscle at the indicated point of trouble. The needle is left in 20, 40, or 60 minutes, is then withdrawn and the next step begins. The operator has a huge cigarette-like punk, the center of which is made of grasses and absenthe. Its paper is very scientifically marked off in centimeters. The punk is lighted and waved over the needle hole until the required number of centimeters have been burnt. This method is considered excellent for the relief of pain. In fact, Professor Maksimovich testified voluntarily that it stopped a terrible headache for her.

The excitation method is used when motion is needed, as in fainting spells and loss of consciousness. Here the procedure is the same except that the needle pierces the upper lip!

It seemed that Professor Bogdanov had his tongue in his cheek about this scientific research and probably had it to exhibit to visiting delegations from Red China. On questioning he admitted it was "a little fantastic," but he quickly reiterated the approved philosophy and edict by pointing his finger directly at us and saying, "Remember, I recommend this method for the treatment of these diseases."

Staff of Institute of Infectious Diseases, Academy of Medical Sciences, U.S.S.R., Kiev

Director: Professor Ivan L. Bogdanov, CM-AMS.
Pathologist: Professor Alexandria Maksimovich.
Chief of Influenza Laboratory: Dr. Kornushenko.
Chief of Hepatitis Laboratory: Dr. Ugryumov.

Chapter 25

Third City Specialized Children's Hospital, Institute of Maternal and Child Welfare, Kiev[1]

Functions of Hospital

This hospital was almost destroyed in World War II and was rebuilt. It only recently has been converted into a children's hospital. It has four departments: children's, premature, obstetric-gynecologic, and surgical, containing a total of 400 beds. There also are a polyclinic (outpatient department) and a women's consultation clinic. The beds are divided this way: obstetrics, 60; gynecology, 40; premature, 20; children's medical, 90; surgery, 110; ophthalmology, 40; and otolaryngology, 40.

Personnel at the Institute of Maternal and Child Welfare, Kiev: Assistant Professor Evdokinov, obstetrician; Dr. Novikova, chief physician; and Professor Anatol P. Nikolayev, one of the Soviet's foremost obstetricians.

The hospital serves children from birth to 15 years, and the obstetric department is a concentration point for premature labors and complications of pregnancy in Kiev. Ninety-four physicians are on the staff and the annual budget of 7,500,000 rubles is provided by the city. The hospital serves from 17,000 to 18,000 patients a year and has a general mortality rate of 0.5 percent. Several institutes use the material from this hospital for teaching and research, and the pediatric faculty sends sixth year medical students here for training. A number of publications have originated in this hospital on obstetric, pediatric gynecologic, and infant feeding subjects.

Children's Department

This department, which serves 3,000 children annually, had a general mortality rate of 0.8 percent in 1959. Its cases consist of pneumonia, rheumatic fever, liver and gall bladder disease, bronchitis, asthma, rickets, and toxicosis. Pneumonia was the main cause of death in 1959. Of the 3,000 children, 30 to 35 percent were under 1 year, and these had a mortality rate of 0.7 percent.

Premature Department

This hospital is of the type heard about in Moscow. All women in the city in premature labor are sent for treatment or delivery. This is done so the premature infants can be admitted at once to a premature nursery without the necessity of an ambulance transfer. The premature infants born here are kept here, and there are no prematures admitted from the outside. The premature nursery has wards for several weight groups. All children are fed breast milk at the start, but within 2 or 3 weeks may be shifted to a dry-milk mixture. The criteria for discharge are normal physiological function and a weight of from 2,300 to 2,500 grams.

Following discharge, the hospital has facilities for a long-term followup. Hospital authorities believe that the premature infants of approximately 1,500-gram birth weight catch up in the full-term infants at around 10 to 13 months of age.

There are between 1,200 and 1,300 deliveries a year in this hospital. Since it is a hospital for

[1] Visited October 28, 1960.

pathologic pregnancy, it seldom has a normal delivery. All of the patients of Kiev with toxemia, pulmonary, kidney, and cardiovascular disease, all in premature labor and all patients with Rh incompatibility are concentrated in this institution. As a result the hospital has 350 premature infants a year and 38 deaths (an incidence of 27 to 30 percent and a premature infant mortality rate of 11 percent). Ninety-eight percent of the deaths took place in the first 3 days. Of the total prematures, 38 (11 percent) weighed from 1,000 to 1,500 grams, with eight deaths (21-percent mortality). The mortality rate for all prematures in the city of Kiev was reported to us at 6.8 percent. (The mortality rate for all premature infants from 1,000 to 2,500 grams at the Boston Lying-In Hospital averages 10 percent.) The incidence of prematurity in the U.S.S.R. was 4.8 percent, in the Ukraine Republic in 1959 it was 3.9 percent, and for the city of Kiev it was 4.7 percent. (The average incidence of premature infants weighing from 1,000 to 2,500 grams at the Boston Lying-In Hospital is 7 percent.)

There is a pathology department and a special pathologist in the hospital. Autopsies are performed and pathology conferences are held. Of the 38 deaths, 2 had hyaline membrane disease.

There is a followup clinic for premature infants. Of infants of 1,000 grams or less at birth, there were no deaf or blind babies, one hydrocephalic, one hemiplegic with normal mentality, and one with Little's disease.

Obstetric Department

Seven hundred women were admitted in 1 year with threatened premature labor, and of those, half were carried to term. For injuries, the treatment was quiet sedation; for toxicosis, magnesium sulphate, ganglionic blockade, spasmolytic agents; for premature labor, progesterone, vitamin E and other hormones. Their treatment of premature rupture of the membrane is much the same as in the United States. The obstetric department is studying the problem of the alleviation of pain and the control of labor as well as the management of premature labor.

Surgical Department

This department, through the Kiev ambulance service, provides emergency help to the children of the city. It serves 4,500 children annually, treating cases of appendicitis, intussusception, staphylococcus infection, congenital malformation traumatic injury and accidents, burns, and hernia. It has a special interest in the surgical treatment of Hirschsprung's disease. The delegation was surprised to see two wards of children with duodenal ulcers, the youngest being about 1 year old. A number had active bleeding or perforation. Its general mortality in 1959 was 0.9 percent. The ophthalmology department treats many cases of strabismus and dacryocystis.

Premature Department

The delegation was told that visitors were not admitted to the premature section, but that with proper gowns, masks, and cloth slippers, an exception would be made in our case. There were 20 beds and 13 babies. This nursery was the only one seen in the Soviet Union that approached U.S. standards. There were two large wards, each with three glass-enclosed cubicles, an isolation room, a treatment room, a milk room with a refrigerator, and a room for the mothers to nurse their babies.

The delivery suite is on the floor above. Newborn infants are immediately brought to the first ward reserved for the smallest infants. Each enclosed cubicle contains two or three incubators. For the first time the delegation saw an Isolette type incubator which had been made in Russia. There were several American-made Castle Humidicribs—in addition to Kharkov *couveuses* (warm cribs). Each cubicle had handwashing facilities, a table, a scale, containers for clean and soiled linen, and piped-in oxygen. With one exception, the babies in the cribs were tightly swaddled, but arms were left free. A 1,200-gram infant in the Russian Isolette was naked. A 35-day-old infant of 1,000-gram birthweight, who then weighed 1,600 grams, was shown. The history, chart, and progress notes were excellent.

A very interesting Moscow-made device for artificial respiration was demonstrated. It enclosed the head and chest and produced a cycle of 10 mm of mercury positive pressure and 8 mm of negative pressure at a rate of from 28 to 32 times a minute. Oxygen at 38 percent was used. It is used for treating repeated attacks of asphyxia, pneumonia, and severe intrauterine injury to the cortex. The second ward was similar to the first and had an adjoining room in which the mothers nursed their infants. The room was also utilized as a school for mothers.

There were three isolation wards with the air sterilized by ultraviolet quartz lights. The treatment room was equipped for standard procedures. Approximately 25 exchange transfusions are made a year. The doctors are well acquainted with our literature and the treatment and procedures are much like our own. In general, this was a very first-rate department, well equipped and with an efficient medical and nursing staff.

Research

One of the leading obstetricians in the U.S.S.R., Professor Anatol P. Nikolayev, AMS, discussed his views on the cause and prevention of intrauterine asphyxia. His book on this subject is well known in the Soviet Union. He lists the complications of pregnancy that may affect the fetus as being late toxicosis, uterine inertia, Rh incompatibility, diabetes, and precipitate delivery. In the treatment of these complications, he advises what has come to be known as the "Nikolayev Triad": (1) Oxygen—liberal use in every labor and delivery; (2) Glucose—for anaerobic metabolism; (3) A cardiac stimulant to help combat intravenous stasis (camphor to excite the cortex and stimulate the vasomotor centers, cardiozolen [a German preparation] to help remove venous stasis). The experience with this method in the U.S.S.R. and reports from France and Italy indicate that if used correctly and in time, it is possible to protect the fetus from asphyxia and allow time to terminate pregnancy by cesarean section or forceps delivery. The efficacy of the Nikolayev method has been checked with electrophonograph by Professor Persinyon in Moscow.

Fundamental Problem Remains

Although it is helpful to have a method to minimize the effects of asphyxia on the fetus, the fundamental problem—how to remove the causes of asphyxia—remains. With the universal availability of prenatal clinics, abnormal pregnancy or early toxicosis can be discovered at the earliest moment. In the treatment of toxicosis, the Strogmanov program is favored, quiet and rest to prevent abnormal central nervous system stimulation, no ether or chlorol hydrate-magnesium sulphate, and compazine-like drugs.

The treatment of uterine inertia is by a method developed in this hospital and now used throughout the Ukraine. The first attempt to strengthen uterine action is by the intramuscular (or intravenous for more rapid action) injection of 1 ml (20,000 units) of folliculin, combined with 0.5 ml of ether to speed absorption. If this is not effective, then quinine or pituitary oxytocin is used subcutaneously. The hospital does not use an intravenous drip. This method not only improves uterine contractions but the folliculin is thought to have a favorable effect on the fetus through improving the uteroplacental circulation.

The rigidity of the birth canal and cervix and a narrow outlet are said to contribute to fetal asphyxia. Professor Evdokinov has been interested in the injection of hyaluronidase and spasmolytic agents into the cervix and perineum in the second stage of labor. This procedure is especially useful in premature labor when the head of the fetus can be easily damaged. The use of hyaluronidase was recently started. It appears to have a favorable effect on reducing both the incidence of asphyxia and birth trauma.

Professor Nikolayev was questioned as to how fetal asphyxia was diagnosed. The first sign is a decrease in fetal heart rate. At even a drop in rate observed during contractions, the "Triad" treatment is given. If the condition is not corrected in 10 minutes, operative delivery is advised. A prolonged low rate and irregularity is evidence of existing asphyxia and intervention is indicated. The hospital tends toward conservative methods of terminating pregnancy, and the cesarean section rate is only 1 percent.

Dr. Maksimovitch is studying the prophylaxis of virus infections in pregnancy. The antibody levels in the mother are being determined.

Professor Evdokinov is concerned with the problems of postmaturity, which is considered along with prematurity to be a major cause of mortality and morbidity in the fetus and newborn. The main problem in postmaturity is to make the diagnosis in time. In all cases of postmaturity of 290 days or more, the woman is hospitalized. With the diagnosis established, the next problem is how to induce labor. Conservative methods are employed. In postmaturity, since the fetus may be suffering from asphyxia, the Nikolayev Triad treatment is given. The hospital has found the infant mortality in postmaturity a big problem and chiefly the result of intracranial hemorrhage and trauma. The neuropathologist of the hospital has data showing there is more evidence of central nervous system injury in the postmatures than in the premature infants. The neurologist believes that minor fetal injury may result later

in severe neurological damage. He urges that the management of postmaturity be considered an important field for prophylactic efforts.

The hospital uses the same treatment for carcinoma in situ and invasive cancer as in the United States. The institution has a cobalt bomb and facilities for radiation therapy.

Staff of Third City Specialized Children's Hospital, Institute of Maternal and Child Welfare, Kiev

Director: Dr. Novikova.
Chief, Pediatric Department: Professor Sigalov.
Chief, Psychoneurological Department: Professor G
Chief, Children's Surgey: Professor A. R. Shurluok
Chief, Premature Department: Dr. Bonder.
Obstetrician: Asst. Professor Evdokinov.

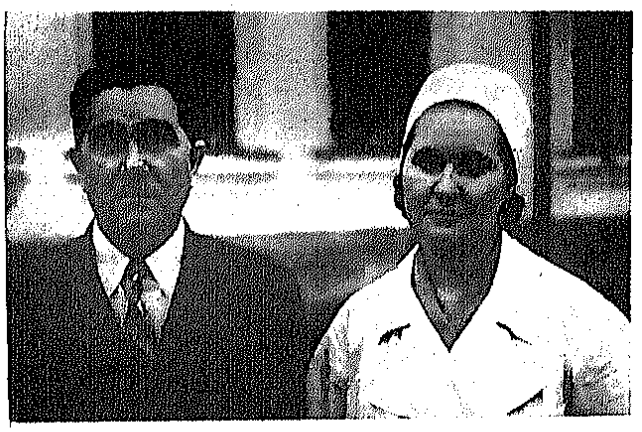
Chapter 26

Second City District Maternity Home, Rayon 10, Kiev [1]

Functions of the Institute

The City of Kiev is divided into nine districts. This industrial district of Podolsky has a population of 200,000, with 63,000 women of childbearing age served by this institution.

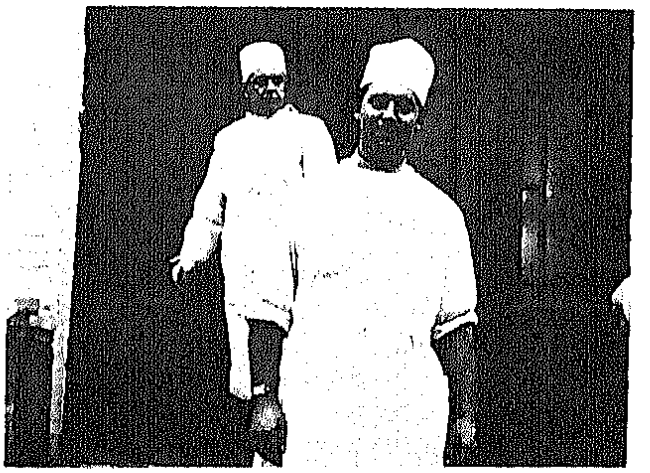
The main function of this hospital is to provide prophylactic treatment for women from the first days of pregnancy. Prenatal care, including psychoprophylaxis, is given in the hospital's women's consultation clinic which is open from 8 a.m. to 8 p.m. The district is subdivided into "parts" and each part has an obstetrician who has fixed appointment hours in the clinic. In normal pregnancy 10 to 12 prenatal clinic visits are made. Every woman has a blood typing, Rh determination, other laboratory work as indicated, and a chest X-ray. The clinic has an internist and dentist who examine every patient.



Professor Peterburgsky, chief obstetrician, and Dr. Lebyed, chief physician, Second District Maternity Home of Rayon 10, Kiev.

This hospital, which is a training center for postgraduate physicians in clinical obstetrics and gynecology, has a staff of 43 physicians, including seven obstetricians and 103 medium medical workers. There are 150 obstetric beds, 50 for gynecology, and 120 beds for infants. Each year, 3,000 deliveries take place, and in 1959, the incidence of prematurity was 3.8 percent. There has been no maternal death in 3 years. The neonatal mortality is 0.7 percent and the premature infant mortality 3.2 percent. They have no problem with sepsis. The cesarean section rate is 0.8 percent. The eclampsia rate is 0.1 percent and the stillbirth rate is 1.1 percent.

[1] Visited October 28, 1960.



Obstetric *ordinant* at Second District Maternity Home. This young physician would be called an obstetric resident in the United States.

During pregnancy, a midwife visits each woman at home or at her place of employment a total of seven or eight times, to get acquainted, to check on living and working conditions, and to discover factors that might unfavorably affect pregnancy. The hospital also conducts a school for mothers where they are instructed on the upbringing of children.

Special Clinics

Breast-Prophylaxis: All women have suction applied to the nipples by means of a breast pump at the 35th week. In primiparas this is repeated at intervals for 15 to 20 treatments; the multiparas receive 10 treatments. If the nipples are flat or inverted, the treatment is started earlier. In 3

years there have been but 20 cases of nipple pathology. Five to 6 percent of these were cracked nipples which were treated by ultraviolet radiation. In the previous year there were three cases of mastitis in the hospital. The incidence of mastitis is not known after discharge for if it occurs, patients go to a different hospital for treatment. A 10-percent solution of chloramine is used routinely for cleaning the nipples.

Contraceptive Clinic: This clinic is held daily from 12 m. to 3 p.m. The use of the clinic is encouraged by publicity and lectures. Although any woman may have an abortion performed, every effort is made to discourage the practice and it is hoped that the ready availability of contraceptive advice will reduce the incidence of abortions. The diaphragm plus chemicals and the cervical cap plus chemicals are both believed to be 97-percent effective. Almost all women receive contraceptive advice postpartum.

A sterility clinic, cancer detection clinic, hypotonia clinic, children's gynecology clinic, and a psychoprophylactic clinic all are operating in this hospital. There has been no patient with syphilis or gonorrhea for 3 or 4 years!

Delivery Floor

As seen in other hospitals, there were two complete sets of labor and delivery rooms used alternately. The delivery room had four tables. In addition, there was an operating room for cesarean sections and one for gynecology. Three women in active labor were seen and while it was evident to us that the labor was painful, the women were very calm and stoical and no sound passed their lips. This hospital encounters 7 to 10 percent failures of the psychoprophylactic method. Barbiturates, demoral, and nitrous oxide were available for the patients who require it. No scopolamine is used because it is believed that it has an unfavorable effect on the fetal heart. Th women and infants stay on the delivery floor fc 3 days and are then transferred to the obstetri wards.

Postgraduate Training in Obstetrics and Gynecology

This hospital is an institute for qualifyin physicians—one of three in the Ukraine. It give two 5-month qualifying courses a year. Th courses consist of 30-percent theoretical instruc tion and 70-percent practical training. Twenty five physicians are admitted for each course, an they are divided for convenience into four groups One obstetric group and one gynecology group ar on 24-hour duty in the hospital and the following day the third and fourth groups are on duty.

The students attend a conference every morning and report on pathologic cases. Each physician must make his own diagnoses as part of the training. At the end of the course, each must present a paper on some obstetric or gynecologic subject and each is given a final examination. During the course, additional reading is required so that they may become acquainted with the current literature.

The physicians who elect to take this course come from all parts of the Republic. Graduates of the 6-year medical school who have spent from 3 to 5 years in practical work and who wish to improve their qualifications may apply. Upon graduation, they return to their oblast and assist in the training of other physicians. The course qualifies them for more responsible positions in their oblast hospital and consultation center.

Staff of Second City District Maternity Home, Rayon 10, Kiev

Chief Physician: Dr. Lebyed.
Chief Obstetrician: Professor Peterburgsky.
Head of Contraceptive Clinic: Dr. Klimova.
Head of Climacteric Clinic: Dr. Svyechnikova.

Chapter 27

First Children's Polyclinic of Shevshchenko Rayon, Kiev [1]

Staff and Functions

This was one of the first polyclinics for children to be established after the Revolution and it is associated with a hospital. The polyclinic has a staff of 42 physicians, 20 pediatricians, 22 other specialists, and 97 medical assistants (nurses). It is responsible for the medical supervision of 13 schools, 13 kindergartens, and 5 nurseries. Each of these has its own medical staff which attends to the health of the children and gives immunizations.

There are 15,000 children, from newborn to 15-year-olds in this district. The whole district is divided into 16 "parts". Each part, with one pediatrician and one nurse, has 800 to 900 children of whom 50 to 60 are under 1 year of age.

This institution functions as an outpatient department. Every pregnant woman in the district receives an antenatal visit from her "part" physician and nurse in her 9th month. After delivery, the maternity home notifies the polyclinic that a baby hae been born and gives the date for discharging the mother and infant. The pediatrician and nurse make a home visit within three days of the infant's arrival home. For the next 15 years, the child is under the observation of the polyclinic. The mother brings her child for a well baby followup at the clinic once a month for the first year. The child is examined three or four times in the second year and once a year thereafter.

The infant receives five immunizations during the first year and boosters as needed thereafter. In 3 years, the district has had no diphtheria and no child has died of pneumonia.

The clinic only sees well children—sick children are seen at home by the "part" doctor or nurse. The mother either calls her doctor or the polyclinic. If the call comes before [illegible] p.m. the "part" doctor makes the call; if later, the "duty doctor" responds. All physicians are provided a car and a driver when making professional calls.

The polyclinic has a large central waiting room with examining rooms and clinics surrounding it. Around the room are offices for the dentist, orthodontist, opthalmologist, otolaryngologist, surgeon, physiotherapist, a record room and a clinical laboratory. In the entrance hall is a small pharmacy. Between 300 and 400 patients visit this clinic a day.

The walls are decorated with large oil paintings of interest to children. One showed a sad young boy returning home from school with a poor report card. All the family is obviously disapproving. His only friend is his dog, who is jumping up on him and trying to console him. Educational material is readily available.

Staff of First Children's Polyclinic of Shevshchenko Rayon, Kiev

Director: Dr. Drykina

[1] Visited October 28, 1965

Chapter 28

Makarov Village Hospital and a Collective Farm of the Village of Kopikov, Kiev Oblast[1]

In Moscow, the Ministry of Health had acquainted the delegation with the master plan designed for maternal and child care in the Soviet Union. This program was seen in operation in the large cities of Moscow, Leningrad, and Kiev. Now the delegation was looking forward to a demonstration of how women and children in small villages, in the country, and on collective farms were given medical care.

The bus ride to Makarov Village took about 1½ hours. The delegation was driven due west from Kiev over the two-lane military highway and then north over rutted dirt roads to the village. The ride was most interesting for the rolling countryside with rich black soil was beautiful. Dense woods with lovely large white birch trees standing out against the deep green background of pines were passed. The little, gaily painted adobe homes with gingerbread trimmings and tailored thatched roofs that bordered the road were charming. Everywhere preparations for winter were in evidence. Root cellars were being filled, the outside walls of the homes were being packed with layers of flaxstraw for insulation, and peat for fuel was stacked conveniently by. The delegation reached the village, and found it to be very tiny, consisting principally of the hospital compound and supporting services. The local economy is entirely agriculture, grain, flax, fruit, sheep and cattle. It was a very prosperous appearing section of the country.

Serves 70,000 Persons

The village hospital serves the 70,000 people of the rayon or district. The hospital consists of an H-shaped, central one-story building, surrounded by a number of ancillary buildings. All were very well built and attractive. The grounds were like a park, with pet animals and birds in cages, fountains, flower gardens and a swimming pool. Many gilt statues d[illegible] characters from Pushkin's fairy tales dotted the yard. The professional personnel live in small cottages across a muddy road from the main hospital grounds.

Dr. Constantine Zubkov, in charge of the hospital and the health of the entire rayon, is an exceptionally well trained surgeon who taught himself English and spoke it remarkably well. He also spoke French and German. He tried to speak English to the delegation but the Russian sponsors insisted he communicate in Russian, through an interpreter.

Makarov Village Hospital

Extensive Organization

The district covers a large [illegible] hospital is the medical heart of the rayon. In World War II, all of the hospitals and medical facilities were destroyed by the Germans. The present hospital center is [illegible] Dr. Zubkov is responsible for [illegible] organization. The district has a [illegible] Makarov Hospital with [illegible] sub-hospitals with 275 beds, [illegible] ric stations (feldscher posts), [illegible] maternity homes (3 to 5 beds each), [illegible] nurseries for 200 infants, 50 [illegible]

[1] Both visited October 29, 1964

4,260 infants, 2 children's milk kitchens, 7 kindergartens for 280 children, 4 rural drug stores, 56 pharmacy stations, 64 schools for 10,000 pupils, one boarding school, 2 children's castles, 84 physicians, 340 medical assistants (nurses), 19 pharmacists, 400 ancillary personnel, ambulance service for out- and inpatients, and medical and sanitation inspectors.

In 1945, this district had 18 physicians, 83 medical assistants, and 1 hospital with 75 beds. There now are 84 physicians, 340 medical assistants, and 12 hospitals with 425 beds. In 1965, plans call for 150 physicians, 700 medical assistants, and 700 beds.

	1940	1950	1955	1959	1960 (first 8 months)
Percent of births in hospitals	------	84	98.7	99.5	99.0
Birth rate per 1,000 grams	------	20.1	21	22.3	21.2
Maternal deaths	------	------	------	0	----------
Stillbirths per 1,000	------	------	------	10	----------
Neonatal mortality per 1,000	------	------	------	2	----------
Incidence of prematures, percent	------	------	------	7	7
Infant mortality per 1,000 live births	56	42	32	12.3	10
Births in District (in this hospital 750)	------	------	------	1,500	1,200
Premature mortality, percent	------	------	------	10	0

Stereotyped Description

The program for maternal and child welfare for the district, as explained to the delegation, was identical to the stereotyped descriptions heard also about the care provided in larger communities. Prenatal care by obstetricians and midwives begins early and is available in many women's consultation clinics, in maternity homes, in rural hospitals and at many obstetric points. All women with abnormal pregnancies are admitted to the district hospital. The psychoprophylactic lessons are begun at 35 weeks of gestation. All normal deliveries are by midwives with obstetric consultants available. There is an active cancer prevention program.

In the maternity homes, the newborns are examined by pediatricians every day. On discharge they continue under the supervision of the pediatrician and are examined and immunized at the same intervals as the city children. Sick infants and children are admitted to the district hospital for treatment. All infants are breast fed or receive breast milk until 5 months of age. Special feedings are obtained from the children's milk kitchens.

Dr. Edith Potter of the U.S. Delegation; Dr. Constantin Zubkov, chief physician and first health officer of the rayon; Dr. Lydia Grechishnikova, Ministry of Health, U.S.S.R.; Juliet A. Shukhbagova, interpreter; Dr. Raisa V. Medyanik, Ministry of Health; and Assistant Surgeon Dr. Moushchisdkin, Makarov District Hospital.

Drop in Infant Mortality

The delegation inquired as to possible explanations for the marked drop in infant mortality in the district from 32 in 1955 to 12.3 in 1959, and to 10 for the first 8 months of 1960. The pediatricians and obstetricians, as it turned out, have concentrated on efforts to reduce the infant death rate.

Every home has frequent visits by nurses and midwives to teach prophylaxis. In the first year of life, any evidence of disease, even if it be only an elevated temperature, requires hospitalization. Every fatality is analyzed at a special conference and the records are also sent to the Ministry of Health in Kiev. If there is any criticism, those responsible are informed so that the same error will not be repeated. Dr. Zubkov thought that the increase in hospital beds, obstetricians, and pediatricians were factors in reducing infant mortality. The improvement in economic conditions and the improved material well-being of the population were given as other reasons.

Reduction in Prematurity

The delegation inquired into the marked reduction in the incidence of prematurity to a level of 7.0 percent for 1959 and 8 months of 1960. A possible partial explanation for this low rate is the frequent prenatal examinations. Early pathology is detected, and all cases of suspected Rh incompatibility, diabetes, and toxemia are sent to Kiev for treatment and delivery. The causes of infant death in the first year of life in 1959 were

given as seven cases of pneumonia, two of asphyxia, three of congenital malformations and two from diarrheal disease.

The district has had no eclampsia and only three or four cases of diagnosed toxemia yearly. Placenta previa is treated in this hospital. In 1959, three Cesarean sections were performed and in the first 10 months of 1960, two sections had been performed. The delegation was shown supplies of blood (for transfusions) brought fresh every 5 days from the Kiev blood center.

The delegation was escorted on a tour of the hospital facilities. The physiotherapy department had standard equipment, diathermy and ultraviolet lights. In addition, there was a well-worn static machine (believed to be a Franklin machine) similar to one tried for neuroses 25 years ago in the United States. At least the medicine produces dramatic results. It literally makes the patient's hair stand on end. It is used for both neuroses and headaches.

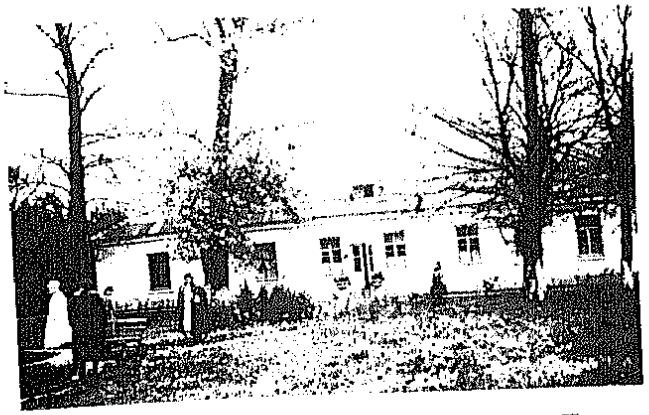
The surgical department had 21 beds and 14 adults were convalescing. Absolute silence was maintained in the ward, and strict attention was paid to a prescribed number of hours of rest.

There was a relatively large waiting room and while the friends and families of patients waited, a tape recorder was turned on that explained in detail the historical paintings that adorned the walls.

The hospital had well-equipped operating rooms and a modern United States anesthesia machine of which the director was very proud. Adjoining the operating room was a modern autoclave room.

Labor Room

The delegation was taken to the labor room, where two women were in active labor. They were having obvious contractions, but in response to the inquiries from the member of the delegation who spoke Russian, they insisted that they had no pain and that everything was fine.



Makarov Village District Hospital's Maternity Home.

Pediatric polyclinics—for well children on the left and for sick children on the right—at Makarov Village Hospital.

The hospital had two delivery rooms, a record room, and an admission room. The nursery contained 12 beds with a special ward and incubators for premature infants.

Another small building, divided into two sections, was the children's consultation clinic. Half was for healthy children and the other half for children with fevers. The clinic had just finished giving 15 children health examinations.

A separate children's hospital had accommodations for 14 children and rooms for mothers who stayed with children up to 1 year of age. A very clean, bright ward, decorated with colorful pictures from fairy tales had five young children with rheumatic fever and convalescent pneumonia.

Children's ward at Makarov Village District Hospital with colorful pictures illustrating fairy tales from Pushkin on the walls.

A separate section, devoted to epidemiology and sanitary inspection, had a staff of 5 physicians and 10 additional technicians. It had a well-equipped chemical and bacteriological laboratory. This service was responsible for all types of inspections, infectious disease control, prophylactic vaccination, food, water and milk control, sewerage and septic tanks. Its personnel were also in charge of sanitary and health education in the district.

Kopikov Village Collective Farm

The delegation was told that this maternity home was typical of the facilities for pregnant women provided on all of the collective farms. The building and its upkeep is provided by the collective (Kolkhoz); the midwives and the feldschers, by the state. The first maternity home was provided for a collective farm in 1934. Now about 30 percent still occupy old buildings and 70 percent have been built according to new specifications.

This particular home, housed in an old building, is 1 of the 18 in this district. The home has three beds, one for labor and delivery, and two for post partum patients. In the first 10 months of 1960, there were 33 deliveries and 5 transferrals to the district hospital for delivery because of placenta previa, twin pregnancy, cephalo pelvic disproportion, and low blood pressure. Women on the farm come to the home in the 8th week of pregnancy. They are given a blood Wasserman, their blood is grouped, an Rh determination and a urinalysis are made, and their blood pressure is taken. They return once a month for prenatal care and urine examination. From 35 weeks on psychoprophylactic lessons are given.

The midwife in charge of this home had worked there 15 years and knew all the women on the farm. She had delivered 49 patients in 1959. There are 2,500 people on the farm and 645 women of child-bearing age. Every woman has two examinations a year for detection of precancerous conditions. The station has two midwives, one feldscher, and two nurses as a permanent staff. In 15 years, there has been no maternal death and no infant mortality.

The midwife gives the infants their standard immunizations and boosters. She gives instruction in contraception. She has had special training that qualifies her to perform simple forceps deliveries, episiotomies and manual extraction of the placenta. In case of need, the midwife can receive assistance from an obstetrician from the district hospital in 10 minutes.

A home on a collective farm of the Village of Kopikov.

Midwife and feldscher in front of the Kopikov Village Collective Farm Maternity Home, which contains one labor and delivery room and a second room with two postpartum beds.

Staff of Makarov Village Hospital, Kiev Oblast

Chief Physician and First Health Officer of the Rayon: Constantine Zubkov.

Chapter 29

United Hospital of the October Rayon, Kiev [1]

Functions of Institute

is institution not only serves the population
ıe October Rayon, but receives diagnostic
ems and difficult cases from other parts of
epublic. There are 8,000 to 9,000 children in
ayon served by the hospital.

e hospital has the following beds: surgical, obstetrics, 80; gynecologic, 45; pediatric, 80; ıal medicine, 115; otology, 40; and opthalgy, 30. Each division has its own laboraı for clinical diagnosis and research. There hree polyclinics: for women, for children's ine, and for adult medicine. The children's linic is responsible for the medical care of ndergartens, 4 creches, 4 schools and has ıl departments for tuberculosis, neurological ses, dentistry, and X-ray.

is hospital, used for teaching, supplies al material for students in the pediatric ty of the Kiev Medical Institute. The practraining in pediatrics begins here in the nt's 3d year and continues for 4 years to ıation. In 1951–52, there were 167 pediatric cians graduated and in 1959–60 there were In addition, the hospital gives a 2-year postıate course for physicians wishing further tric qualifications. There are 8 to 14 candifor the *ordinatura* qualification each year to 4 *aspiranturas*.

Statistics

ɔwth of this hospital; built in 1937; new surgical department, 1956

	1950	1955	1959	1960 (8 months)
	440			550
(rubles)	5,000,000	8,800,000		11,300,000
ans	76			232
visits	194		3,857	
lty (percent of hospital ssions dying):				
th–14 years	4.7		1.4	0.9
stro-enteritis	7.8	0	0	
eumonia	7.8		1.2	

Scientific Research

In 1957, the mortality rate from gastroenteritis was very high and a program was instituted which emphasized early diagnosis and treatment with antibiotics. The results were excellent:

Mortality	1957	1958	1959
	Percent	*Percent*	*Percent*
Enteritis	17.4	10.8	2.0
Dysentary	2	1.2	0

The pediatric department is particularly concerned with nutritional research on the mass production of a new infant formula simulating breast milk. Professor Elena Khokhol, the hospital's director, visited the United States in 1953 and became interested in our methods for producing canned infant formulas. She was unable to discover exactly how this was done during her stay, so she started her own investigations on her return to Russia with the help of a chemist, Professor Galodin. The new milk she has produced begins as one-half skimmed milk that is passed through a cation exchange column. This decreases the amount of calcium about 20 percent, and leaves calcium-phosphorous ratio approaching that of breast milk. It produces a fine curd easily digested. This special milk has been mixed with 60 percent breast milk and tested on premature infants and young newborns, who are said to thrive on it.

The addition of sugar to this milk to make it even more similar to the model of breast milk now is being studied. They have concluded that beta-galactose is the carbohydrate of choice, since it produces a more favorable intestinal flora than either plain sugar or beta-lactose. The new preparation is called "Ionite" and both the Kiev and the Leningrad milk factories are producing and canning it in liquid form. The next step will be to produce it in dried form.

[1] Visited October 31, 1960.

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Good Clinical Setup

In a visit to the pediatric wards, patients with rheumatic fever, nephritis, post-hepatitis, coli cystitis were seen. They have many patients with rheumatic fever and chorea and are studying these cases. The laboratories are better equipped than those seen in most other hospitals.

Very ill infants with pneumonia and respiratory infections were in a small closed cubicle with no outside ventilation. A room for nursing mothers or mothers of very ill children to spend the night is close by.

Professor Khokhol reported the identification of a new form of staphylococcus disease, which they call an allergic type of sub-sepsis caused by the hemolytic staph aureus. Charts were shown of twin infants who gained weight well but who had high temperatures and positive blood cultures. They recovered after being given gamma globulin.

Staff of United Hospital of the October Rayon, Kiev

Director: Elena Nikolaevna Khokhol, C. M., AMS.
Chief Physician: Dr. Udrintseva.

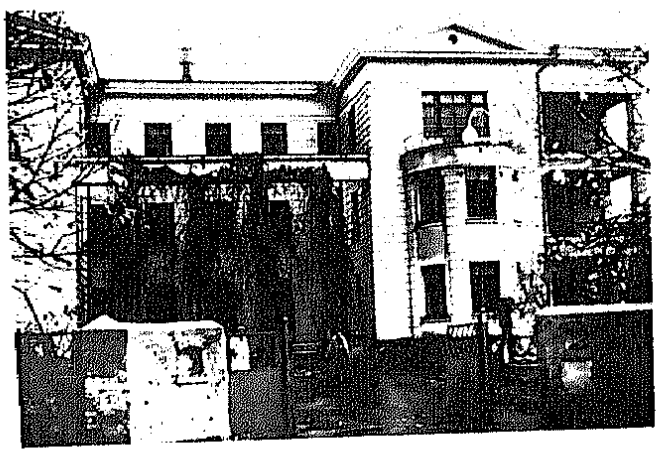
Chapter 30

Kindergarten of the Lenin Arsenal Plant, Kiev [1]

The Kindergarten Building

This kindergarten is one of 60 in Kiev, but there is a great demand for more facilities and the 7-year plan calls for doubling the kindegarten capacity by 1965. The Lenin Arsenal built the especially designed building 25 years ago and is responsible for the upkeep and maintenance of the physical plant. The director and the trade union committee of the arsenal control the kindergarten.

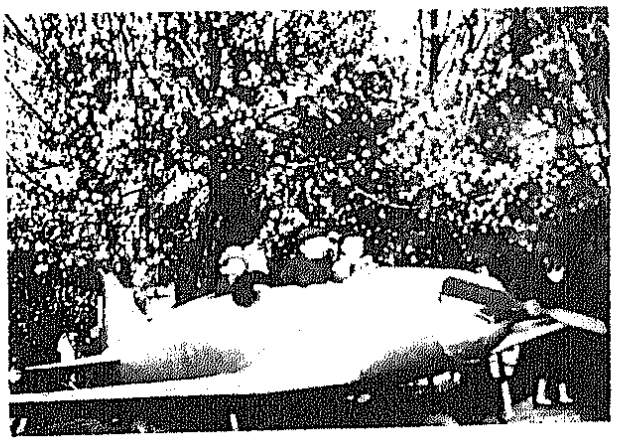
The building, a large attractive H-shaped, three-story structure with open porches, has a capacity of 200 children from ages 3 to 7 years. It is surrounded by a wooded park-like play yard with scattered gardens and little paths. Many pieces of play equipment are enjoyed by the children. Scaled down model airplanes, streetcars, trucks, buses, houses, climbing equipment, slides, and sandboxes are available.



Kindergarten of the Lenin Arsenal Plant, Kiev.

The bright, cheerful entrance hall has many plants, as does every room visited. Every child has his own size locker for outer clothing.

The building is subdivided into 10 units to accommodate children of different age groups. Each unit has a play and work room for about 25 children, its own toilets, and rest rooms. In every unit, the furniture and bathroom facilities



Collectivist play. The name of the airplane is "Friendship."

are scaled to the size of the child. The toys and games are also distributed according to age and arranged in the playroom with military precision. In every playroom is a small plaster statue of Lenin.

There is a large gymnasium with adjoining open porches, and a large assembly and music room. A large room is provided with sand tables, a wading pool, an aquarium, clay working benches, toy animals, and models. Many examples of the children's handiwork are on display. There are three spotless dining rooms with small tables. Each room seats 60 children.

Staff

The Ministry of Education selects the director, assistant director, and the staff of 16 teachers, 16 group aids, 5 cooks, and 12 additional personnel. Three teachers assigned every two groups work 6 hours a day. The teachers' training consists of a special 5-year course in the pedagogic faculty after the basic 10 years of regular school.

The Ministry of Health is responsible for the medical staff of one pediatrician and three nurses. Once a month, other pediatricians from the poly-

[1] Visited October 31, 1960

clinic come to assist in examining the children. The kindergarten has the regular services of a dentist and other specialists as needed.

The operation funds for the kindergarten are provided by the Ukraine Republic with a budget of 1,200,000 rubles a year. The actual operating cost amounts to 300 rubles per child per month. The maximum charge per child is one-third of cost or 100 rubles ($10.00) per month, but the fee is based on the total wages of the mother and father and the number of dependent children and may be as small as 20 rubles a month.

Basic Objectives

The basic programs of all kindergartens are determined by the Ministry of Education for the U.S.S.R. and they are elaborated, within limits, by the ministry of the individual Republic. The Ministry of Education provides the kindergarten with a basic guide and conforming to this guide, each institution works out its own program in such minute detail that every half-hour of the life of each age group is organized.

The training program, received from central authority, recognizes that every 3-year-old child is by instinct an individualist who says "this is mine." It is the task of the kindergarten gradually to remove this concept and plant firmly in his conscious and subconscious mind the concept of the collectivist society. First, he must learn that in the collectivist society he must live and help others. The school must develop all aspects of the child, ethically, morally and physically. He is given much instruction in the way he should act and what he should do. If a child is troublesome and continues an individualist, a great deal of time and attention is devoted to him. Should a child continue to deviate, they suspect he may have some physical defect and the advice of a neurologist may be sought. If such a child has any defect in speech or hearing, he is transferred to a specialized kindergarten for treatment and care.

The result of kindergarten training is to prepare the child for school, to teach him how to concentrate on a task and make future studies easier. Kindergarten graduates, it is felt, make good students.

After a successful 4 years of kindergarten indoctrination, the conditioned child will now say "This is ours!"

Primarily for Arsenal Children

This kindergarten is primarily intended for children of those who work in the arsenal. First priority goes to children of working mothers, and 80 percent of the factory mothers' children in the school are from this group.

The next priority goes to the fathers of the factory whose wives do not work, and their children make up the remaining 20 percent. Some mothers may prefer a kindergarten nearer their homes. Other families have grandmothers at home to attend the young, but this is discouraged as it is believed that the care afforded in the kindergarten is better than that given at home. Should there be vacancies in the school not required for the factory workers' children, children from other sections of the city may be admitted.

Children arrive at 7:30 or 8:00 a.m., and stay until 6:30 to 7:30 p.m. There are no facilities for overnight care. They receive three regular meals. Children of mothers who work late and who remain until 7:30 p.m. receive an extra fourth meal.

Parental Instruction Important

Parental instruction is an important function of the school and there is a parents' committee that assists in running the kindergarten. Parents also volunteer to help in the school program and make suggestions. They are present at the holiday programs and take part in the rehearsals. Their visits are encouraged at all times and they attend special lectures and seminars. Much printed material is provided to guide them in the training and upbringing of their children at home. Teachers and nurses also visit the parents in their homes to give instructions and discuss the solution of problems.

Physical Care, Well-being

The Ministry of Health is responsible for the physical care and well-being of the children. The full-time pediatrician and her three nurses prepare the menus, make sure each child receives adequate vitamines (fish oil, apple juice, and vitamin C), conduct a daily prophylactic examination of each child to isolate those with infections, are responsible for immunizations at the proper times, observe the physical growth and development of the child, and discuss problems with the parents.

The medical department is in charge of a program designed to condition the child so that he will not catch colds or infectious diseases. The routine is outlined in detail in a "guide book"! The children are given exercises in cold air, either outdoors or, in winter, in the gymnasium with the balcony doors open. They wear shorts, and slippers, and shirts with sleeves rolled up. The stockings are rolled down. They wash their hands and feet in cold water. They sleep out of doors or with windows open and play out of doors all winter. This is "toughening up" or "physical conditioning."

In the first 10 months of 1960, there were no cases of German measles, three cases of measles, and five cases of mumps. They believe that infections of this sort do not spread because of the conditioning program.

If a child is found to be ill, the factory is called and the mother takes the child home. She is given a medical certificate that assures her full pay and job protection as long as the child needs her attention at home. If hospitalization is needed, an ambulance takes both mother and child to the hospital. The sick child's district pediatrician provides the medical care and supervision at home.

Complete Records Kept

The kindergarten keeps a complete record on each child and forwards it to the school when the child leaves the kindergarten. A record of all immunizations and treatments is sent at once to the children's consultation clinic in the area in which the child resides. Two records, therefore, are kept—one for the school and one for the polyclinic. This very commendable record system gives a complete story of the child from birth date to his present age. This permits good continuity of care.

Play Period

The delegation's arrival coincided with the beginning of a play period. Groups of children were marching out to play while other age groups were already amusing themselves in unorganized play. In one playroom, a group of 25 children was just completing its morning project, which was to make invitations for their parents to the party being planned in celebration of the October Revolution. They arose on command, and we were greeted in Russian. Later, the delegation was told the children had said they hoped we wished for peace. When the class was dismissed to go outdoors, each child neatly cleaned the worktable and piled his materials together. Certain children had obviously formed attachments to others, for on dismissal, they quickly sought each other out and, arms around each other, left the room. Three monitors returned and very quickly and efficiently cleared all the tables and placed the supplies in their proper places on shelves. When they had finished, the room was immaculate.

Toys and Books

In a large window alcove were arranged a variety of dolls and toys. The delegation was told the children could select and play with anything they wished, but when they have finished playing it, the object is always returned to the precise spot from which it was taken. A number of well-illustrated children's booklets—which also taught the lesson of neatness and orderliness—were seen. Even the scissors on shelves were arranged in a geometric pattern.

Except for the size of the playroom furniture, all the playrooms were similar. The toys were said to be prescribed for each age group after careful study and were the standard ones recommended in the guide book. They seemed very gay in color but unimaginative, and superficially there seemed little difference between those of one age group and those of another. There was some evidence of preparation for primary school in the use of toy clocks, as though the children were being taught to tell time. However, the delegation was informed that there were no efforts made to teach children to read or write, although some children did acquire some ability to read and write at home.

Efficient Staff

The kindergarten apparently has a very efficient teaching and medical staff. Director Pyetrokovskaya has been in this work for 35 years. The delegation was taken into her conference room where her detailed plans for a future program were being made. Everywhere was evidence of the regimentation of the children's lives, with every moment of their day accounted for and with every child on an individual regimen written out

On the kindergarten porch are Dr. Lydia Grechishnikova, Ministry of Health, U.S.S.R.; Dr. Tamara F. Oryeshko, kindergarten physician-pediatrician; Dr. Raïsa V. Medyanik, Ministry of Health; and Julia Pyetrokovskaya, director of the kindergarten and teacher for 35 years.

and posted. Presumably, a copy of this routine is given the parents to follow when they assume the responsibility of trying properly to rear their own children in their own homes.

Staff of Kindergarten of the Lenin Arsenal Plant, Kiev

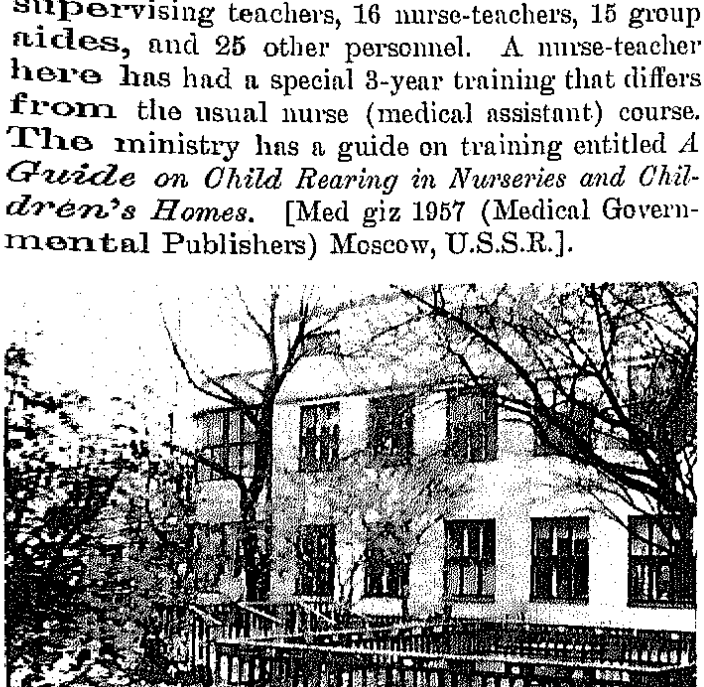
Director: Julia Pyetrokovskaya, teacher.
Pediatrician: Tamara F. Oryeshko.

Chapter 31

Crèche for Rayon: Perchersky-Podulsky District, Kiev [1]

This crèche, organized in 1930, was built for the purpose for which it is used, servicing a part of a rayon. It has 160 beds and is divided into eight units, one for the breast-feeding age (2 to 9 months); one for the crawling age (9 to 15 months); three for 15 to 19 months, and three for 19 months to 3 years.

The nursery has a staff of 2 pediatricians, 2 supervising teachers, 16 nurse-teachers, 15 group aides, and 25 other personnel. A nurse-teacher here has had a special 3-year training that differs from the usual nurse (medical assistant) course. The ministry has a guide on training entitled *A Guide on Child Rearing in Nurseries and Children's Homes.* [Med giz 1957 (Medical Governmental Publishers) Moscow, U.S.S.R.].



Crèche of the Pechersky Rayon, Kiev.

Plans were being made to expand the crèche program, to erect new buildings so that the crèche and kindergarten could be combined and to locate them nearer the plans and in centers of residential districts.

700,000-Ruble Budget

This crèche receives a budget of 700,000 rubles a year from the Ukraine Republic. In addition, the parents pay 150,000 rubles a year for the children's care. The family's payments range from 20 to 100 rubles a month, with 90 percent of the parents paying the 100-ruble rate.

The nursery is open from 7 a.m. to 6 p.m. One pediatrician is on duty from 8 a.m. to 2 p.m. and the other from 2 p.m. to 5 p.m.

The pregnant woman is granted a leave with full pay from the 32d week of gestation through 2 months post partum. In addition, every worker and this is most of the population, receives an annual vacation of 24 work days, while teachers and scientific workers have 2-month vacations. This is in addition to sick leave. If a mother wishes additional time, she may be absent from her job for one year and still have her position held for her return. As a result of this liberal policy, few mothers now leave their babies for care at early ages. If a mother does return to work while she is still nursing, she receives a note from the doctor and she is excused, without penalty, for 1 hour every 3, 4 or 4½ hours, as the case may be, to come to the crèche to nurse her child. While the children are in the nursery they do not go to the polyclinic but receive all their examinations and immunizations there.

Visit to Different Groups

The delegation visited all the different groups in the crèche. The nursery was well equipped, clean and in good order. It was more crowded than desired, but it was explained that the demand for nursery care was very great and there was a real shortage of facilities. By 1965 it is planned to double the nursery capacity in the republic. The nurses and their aides were very warm and friendly in handling the children.

The breast-fed age groups (2 to 9 months) were housed in a separate building. Eight infants (none were under 6 months) were being cared for here. Not a happy looking lot, they were in playpens or propped up in highchairs. Runny noses, much in evidence, were being wiped by nurses with

[1] Visited October 31, 1960.

rather rough-looking paper. There were a few toys, mostly rattles, in evidence. One baby was crying lustily and was being carried around and patted by a nurse.

The room for the crawling age group (9 to 15 months) had practical table-height play yards. There were 20 infants here being attended by three nurses or aides. These were the most unhappy looking children seen. The babies just sat and stared with rather blank expressions and displayed little life although occasionally one whimpered. The toilet facilities consisted of pots in the adjoining playroom, and the delegation was told that toilet training began at 8 months.

All Asleep

When the 15- to 19-month and the 19-month to 3-year groups arrive at 7 a.m., they are put to bed. At 8:30, they have breakfast and a play period. Lunch is at noon and then bed again until 4 p.m., when they have a short play period and another meal. They play again until they go home between 5 and 6 p.m. The delegation's visit was at about 1 p.m. and the babies were wrapped snug in their beds. If they were dreaming of sugarplums they did not show it. Some were in bed indoors and some were out on the balcony with windows open. The balcony spots are reserved for the children who are not very strong and require "hardening." They were sleeping, or supposed to be sleeping, flat on their backs all tightly bound down by sheets. Those on the porch were wrapped in sleeping bags and quite immobile with only their little faces showing. Quite a few of the older children were awake and followed us with curious wide-open eyes, but they made no sound or movement.

Doll Collection

In a large playroom, there was an interesting collection of little dolls sitting on tiny chairs. The chairs had the white cloth slipcovers the delegation had come to associate with hospital and clinic furniture. The dolls and chairs were again arranged in precise order and hanging over these playthings was a large portrait of Lenin as a baby. They have music here twice a week, a puppet show, and other performances. The room had a large model automobile the children could climb into.

The delegation was concerned as none of us got the feeling of happiness and well-being one usually encounters in the midst of a group of children of this age. In all fairness, the older children were in bed and they might well have livened things up had we arrived at a different time. We still got the impression of institutionalized children. Perhaps these are like the children in the Kibbutzim in Israel, who go through a phase of being very unhappy before they settle down to becoming good members of a group.

Staff of Crèche for Rayon: Percheraky-Podulsky District, Kiev

Director: Dr. Korenyok.
Pediatrician: Dr. Stadukhina.

Chapter 32

"Without Pain" (Motion Picture on Psychoprophylaxis), Kiev [1]

The method of psychoprophylaxis designed to rain women for childbirth so they can deliver ithout fear or pain originated in the Ukraine. is now the party line and is universally used in ie Soviet Union. In every maternity home the elegation was told that the method was successful its objectives in 85 percent of pregnancies. ne of the originators of the method, Professor natol Petrovich Nikolayev, wrote the script for noving picture on psychoprophylaxis and volun- ered to project it for us. He explained the plot us through our interpreter.

This scientific color film telle of national Soviet ystem of preparing women for pregnancy, widely nown as the "Soviet Psychoprophylactic Method or the Relief of Pain." The elimination of pain an important part of delivery and this method as become an official State measure. Almost all regnant women in the Soviet Union now have sychoprophylatic lessons. This is not a scholarly lm for professional use, but rather straight prop- ganda addressed to a lay audience. Its main bjective is to interest and train women in this nethod.

The scene opens in Kiev in the apartment of a young married couple. After the mother and father dress the child, the mother takes the infant to the children's consultation clinic for a routine examination. The mother and child then go for a walk in the park. The sun is shining, flowers are blooming, and everywhere children are play- ing. The mother, whose name is Vera (Russian for Faith), is the heroine of the story. Vera notices a woman alone and sad. They become acquainted, and it develops that the new friend is sad because she is pregnant and afraid of delivery. She has been told that delivery is accompanied by great pain and danger. Vera tries to reassure her and in a series of flashbacks tells her of her own experience with birth. In the beginning, Vera herself was afraid, and her fear was strengthened by the descriptions of delivery in novels and by old wives' tales. Unfortunately, in fiction, only the painful and pathologic deliveries are dramatized. Vera has a woman friend who is a physician and who advises her to attend a women's consultation clinic and to take all the psychoprophylatic lessons.

In the women's consultation clinic, Vera discovers from the doctor and midwives that delivery without pain is possible. She is taught the anatomy of women and the physiology of labor and delivery. She is taught what to expect and how to behave during delivery.

She is shown a film that acquaints her with the work of the great Pavlov on conditioned reflexes. She sees a classical experiment with a Pavlovian-conditioned dog. The dog has been conditioned so that a light signal is associated with the pleasurable experience of eating food. The dog is exposed to continuous and painful electric shocks and is very disturbed. The light signal now superimposes and overcomes the painful sensation, and the dog now eats food, paying no attention to the shocks. She therefore learns that with a normal central nervous system it is possible to create a situation in which pain can be minimized or eliminated. She discovers that fear of pain may actually strengthen the pain itself.

At home, in cheerful conversation while sewing baby clothes, her attention is called to a spot of blood on the material—she has pricked her finger and did not realize it. She next is seen at the clinic about to have a finger pricked for a blood test. Now she fears the prick and says "ouch" when stuck.

Vera is taught how to breathe, how to relax between contractions, and how to set up counter impulses by massage and physical exercises which she continues at home.

She comes to appreciate that having a baby is hard work that must be prepared for and that a woman can be taught to do it well. She realizes that intense muscular contractions can be experi-

[1] Seen October 29, 1960.

enced without pain. Her fear disappears and she is happy while waiting for her child. She continues to work in the textile factory, she swims, and enjoys her weekends with her husband.

The time for delivery arrives. She comes to the maternity home and is met cordially by the personnel. She encounters a friend, also about to deliver, who has not taken the lessons seriously (the friend is the villain of the movie—a nonbeliever and deviationist). The friend is full of fear and subsequently is a failure of the method and has a difficult time.

Vera has a calm and painless delivery. She experiences great joy in nursing her infant son.

The picture ends with Vera's words: "So happiness came to me."

Chapter 33

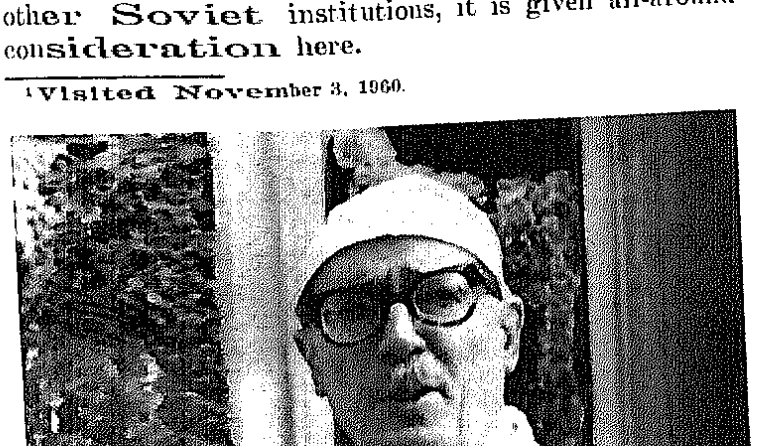
Institute of Physiology and Pathology of Women, Tbilisi [1]

Professor Zhordania and his large staff received us in a most cordial manner. The Institute director, who had recently visited the United States and was very pleased at the warm reception, maintains almost daily contact, through correspondence, with his scientific colleagues in America. He presented the delegation with a prospectus on the Institute he had prepared for a delegation of the World Health Organization. His formal introductory statements to us were identical to those found in the prospectus.

Concentrates on Fertility, Sterility

The Research Institute for the Physiology and Pathology of Women of the Ministry of Health, Georgian S.S.R. was founded in February 1958. It concentrates on one main problem: fertility and sterility. Although this problem is studied by other Soviet institutions, it is given all-around consideration here.

[1] Visited November 3, 1960.



Professor Josef Zhordania, director, Research Institute for the Physiology and Pathology of Women, Tbilisi.

The Institute is housed in three buildings (total floor space 1,600 sq.m.) in the central part of Tbilisi. The main building houses the administration, the clinic, and dispensary. The experimental laboratories are in the second building, and the third is devoted to the service departments.

The main task of the Institute is to evolve a series of measures to improve the health of women, to deal with cases of sterility, and to postpone the menopause, to prolong sexual life, and to delay old age.

The Institute has the following departments: Administration and Service Department, Organization and Methods Department, Clinical Department, Experimental Department, and Auxiliary Research Department.

The staff consists of 109 persons: 35 researchers, 26 trained nurses, 23 male nurses, and 25 service personnel.

During the first 2 years of its existence, the Institute worked on the following problems:

Abortions.—Seeing that abortions have an adverse effect on the health of women by causing various gynecological complaints, sterility, and early menopause, the Institute addresses particular attention to this problem.

Sterility in marriage.—According to world statistics, sterility is the curse of from 10 to 15 percent of marriages, which is a tragedy, especially to women with a strong instinct of motherhood.

The menopause.—As is known, in the Soviet Union, women play a prominent part in the social, cultural, and economic life of the country. At the age of 45 to 50, working women attain the peak of their efficiency. Women of this age, particularly intellectuals, are able to produce work of the highest value. The menopause, which frequently sets in at this age, often has an adverse effect on the health of a working woman, thus affecting public interests. One of the most important tasks of health protection for women is combatting the effects of the menopause.

Functions of Institute

Functions at the Institute are divided in the following way:

1. *The Administration and Service Department* takes care of administration, finance, catering, the warehouses, and workshops.

2. *The Organization and Methods Department* has two sections: the organization and methods section and the sociology section. The former studies problems of birth rate, death rate, and the natural increase of the population. Particular attention is devoted to the dynamics of abortions and means of preventing them. The section keeps up a regular correspondence with medical organizations in the districts, gives talks over the radio and television, publishes special articles in newspapers, and booklets, and deals with the legal aspects of the problem.

Members of the staff are regularly sent out to various districts of the republic to study these problems locally. On the initiative of the Institute, councils for the prevention of abortions have been set up in most of the districts.

The sociology section studies the relation between women's participation in social life and motherhood. Members study cases of criminal abortions, their causes and effects, and preventive measures, as well as the problem of childless marriage with its legal and social aspects.

3. *The Clinical Department* includes the clinic proper, the dispensary, laboratories for clinical and X-ray diagnostics.

The clinic, accommodating 50 cases, was opened in 1959. It studies cases of primary and secondary sterility, disorders connected with menstruation, and pathological menopause. A total of 700 cases had undergone treatment since the day the clinic was opened. Various tests are employed to study the functions of the female sexual organs. Hormones are used in a complex form of treatment. As a result, from 15 to 20 percent of formerly sterile women have become pregnant. In most cases, normal menstruation has been achieved, and pathological effects of the menopause have been reduced.

Taking into consideration the fact that most cases were serious and had previously been taking various cures for a number of years, the results mentioned above may be considered satisfactory.

The improvement of equipment and the purchase of new equipment have been provided for. The department also contemplates the introduction of new methods and the clinical application of experimental data. The number of beds is to be increased.

The dispensary was opened in September 1958. The number of patients that have received treatment is 2,000, the total number of their visits to the dispensary amounting to 22,000. The dispensary is open to residents of Tbilisi, of the entire republic, and to patients arriving from other Soviet republics. Cases of sterility, or irregular menstruation, and pathological menopause are treated at the dispensary. There have been 300 pregnancies following this O.P.D. treatment.

The clinical laboratory does all the clinical and diagnostic tests, and in addition, carries out research work. The main problem relates to the attempted systematic improvement of cytological diagnosis in cases of hormone disorders in women. The first step was to establish criteria for the cytological diagnosis of different phases of the normal menstruation period. As a result, it has become possible to study periodical changes that may be abnormal. The cytology of the mammary gland is studied simultaneously.

The X-ray room diagnoses causes of sterility in women by means of metrosalpingography. Research is being carried out to evolve new contrast mediums and new methods of determining the functional condition of the oviducts without the introduction of contrast material into the uterus.

4. *The Experimental Department* has laboratories of experimental surgery, endocrinology, pathophysiology, biochemistry, embryogenesis, and andrology.

The laboratory of experimental surgery studies surgical methods of improving morphological and physiological conditions in male and female genitals, as well as new diagnostic tests for the determination of sterility. Problems connected with the transplantation of sex organs also are investigated. The laboratory is adequately equipped to conduct this research.

Experimental investigation is carried out not only at the Institute, but elsewhere as well. During the current year an expedition was sent to a state farm with the aim of carrying out experimental studies of sterility in animals. The materials collected by the expedition are being studied at present. Methods evolved by the experimental surgery laboratory are to be applied in surgical and gynecological practice.

The endocrinology laboratory concentrates on the following problems: sterility, miscarriage, menopause, and certain endocrinological disorders in women influencing the genital and vegetative functions of the ovaries. A single system of hormone therapy is being evolved, determining the dosage and time of treatment.

The laboratory of biochemistry studies the biochemistry of the menstrual cycle and the biochemistry of sperm. With reference to the former, the laboratory studies changes in the indices of the mucous membrane in the vagina connected with different phases of the menstrual cycle. The object of the latter study is to determine the fertilizing properties of sperm. It is intended to study normal sperm, and cases of oligospermia and azoospermia. The laboratory has up-to-date equipment.

The aim of the laboratory of embryogenesis is to investigate conditions favoring the preservation of life of fetuses and prematurely born children and to determine the conditions interfering with the normal development of a fertilized ovum. The laboratory is preparing to investigate causes of malformation.

The androgen laboratory studies the causes of sterility in men. As is known, childlessness is caused, in up to 30 percent of cases, by sterility of the male. Therefore, in all cases of childless marriage, the sperm of the husband is examined. The problem of childlessness is also studied experimentally. Better methods of pathogenic diagnosis of the cause and treatment of sterility in men are being evolved.

Certain problems of the physiology and pathology of spermatogenesis are being studied with a view to establishing the regenerative faculty of the testicular tissues. Methods of treatment evolved by the laboratory have proved effective in quite a number of cases, which warrants the continuation of research in this line.

5. *The Auxiliary Research Department* includes the library and the animal house. The library was organized in August 1958. It contains 1,300 volumes, including 12 special periodicals in Georgian and Russian, 7 foreign journals in English, German, Polish, and Czech, and 300 books in foreign languages. New books and journals are regularly purchased and subscribed to.

The animal house contains dogs, cats, rabbits, white rats and mice, guinea pigs, and frogs. Some are used for experiments and others are allowed to multiply.

Visit to Laboratories

A visit to the various laboratories enabled the delegation to add certain information to that presented by Professor Zhordania.

The Organization and Methods Department is directed by Professor E. Antladze. To improve the birth rate of the republic it is necessary to reduce the death rate, the number of abortions and the percentage of sterile marriages.

	Birth rate	Abortion rate	Death rate	Natural population growth
1957	22.5	4.2	6.8	15.7
1958	23.1	4.6	6.5	16.6
1959	24.4	4.4	7.0	17.4

The Institute was gratified that the birth rate in the republic increased in 1959.

Until recently, sterility was defined as 3 years of childless marriage. However, as a result of a study of 2,000 women in Baku, the definition was changed to 1 year of childless marriage in which the couple had engaged in intercourse of regular frequency. The delegation was unable to get any details of this study or a definition of what is accepted as the regular frequency of intercourse. It was told that next year a complete survey of sterility in one rayon will be undertaken.

The sociology section of the Organization and Methods Department, directed by Dr. Bakhradze, is interested in four problems: (1) abortion as a social phenomena; (2) late marriage; (3) social aspects of sterile marriage; and (4) legal and moral aspects of artificial insemination.

Although abortion has been made legal, it is publicized through every medium as the enemy of women, society and the state. From preliminary studies it is concluded that the main cause for desiring an abortion is not economic but a reflection of the psychological character of the particular woman and therefore is frequently very hard to combat.

Late Wedlock Defined

Late marriage is defined as marriage when the man is 30 and the woman 25. This institute has pioneered in the study of the relation of late marriage to infertility. They are disturbed about the legal and moral aspects of artificial insemination, but there are no laws on this subject. This prob-

lem is being investigated, and when the studies are completed a new legal code will be formulated.

Births out of wedlock are not being studied since they constitute a very minor problem. Women can get abortions freely and do not continue the pregnancy if they are not married and do not want the infant. A study is underway of 900 marriages in Tbilisi in which both the first and the second marriage has been sterile.

The Statistical Department was in striking contrast to the excellent modern equipment seen elsewhere in the Institute. The equipment here consisted of an abacus and an ancient adding machine.

Clinical Department Wards Pleasant

The wards of the Clinical Department, where women are admitted for the study of their sterility problems, were the pleasantest we had seen. There were flowers by the beds, reading lights, and the women were reading or gaily chatting. The studies to determine hormonal levels included cytology and the fern phenomenon (crystallization of) according to Papanicalaou. Adrenal studies were limited to the 17-ketosteroids. Blood sugar and nitrogen balance studies during the menstrual cycle were said to be of value in the diagnosis of sterility.

Dispensary

The dispensary (polyclinic or O.P.S.) has a staff of 11 physicians working in three shifts. It is open from 8 a.m. to 10 p.m. and serves 150 patients a day, not only from Tbilisi, but from all over Georgia.

The surgical laboratory, which was in an unscreened animal house, was concerned with obstruction of fallopian tubes and vas deferens and transplantation of sex glands. A uterus had been detached and then attached to the omentum. It was found that after 12 to 15 months the muscle will still contract and there is no evidence of sclerosis. Ovaries of old animals have been put in the omentum and follicle formation has followed. The omentum has been drawn down to the testes, or testes have been put into the abdomen and spermatogensis and endocrine activity have been preserved for 40 to 50 days.

The biochemistry laboratory is studying protein fractions and amino acids of cervical mucus and [illegible]yaluronidase fraction of sperm. Also being d is the biochemistry of semen of rabbits, [illegible] which is obtained by artificial vaginas. Studies are being made on the effect of X-ray on fructose and glutathione metabolism and oxidation and reduction phenomenon, which are all closely related to fertilization. Changes in quantity and quality are related the ability of sperm to fertilize eggs. Electrophoresis is used to differentiate protein fractions.

Male Sperm Studied

The androgen laboratory is studying male sperm in relation to sterile marriages and the pathologic conditions leading to sterility. Specimens of semen are received for analysis. They are subjected to microscopic analysis, and the percentage of morphologically normal and abnormal active and inactive sperms are determined. This institute has devised a method of measuring the mobility of sperm in microseconds. When the diagnosis of type of sperm is made, further studies are initiated in an attempt to determine the etiology of the sterility. These studies involve genadatropins, ketosteroids and basal metabolic rates. The genatropic studies are too recently begun to be ready for reporting, however, the investigation indicates that the adrenal cortex hormones and the basal metabolic rates are reduced in 30 to 50 percent of the cases of sterility.

In a case of sterility, if either the B.M.R. or the ketosteroids are low, treatment is started at once. This includes general supportive measures, an attempt to improve thyroid function, and the rebound method of giving androgens. This method is based on the theory that if testosterone is given, it inhibits the action of the pituitary and spermatogensis is improved. This procedure is still in the experimental stage.

Studies have been published in which male infertility has been produced experimentally in animals by causing inflammation of the testicles. Cryptorchidism has also been studied in the rat. If testicular atrophy is produced by putting the testes in the abdomen, recovery will follow placing it again in the scrotum. Because of this latter experiment, surgery in cryptorchid individuals is not recommended until they are 15 to 20 years of age.

Nervous Control of Spermatogenesis

Studies have also been made on the nervous control of spermatogenesis; these have consisted principally of cutting the nerves. It also has been found that in infection of the prostate gland there

is an increase in spermatogenesis but a decrease in the quality of the sperm.

In an attempt to determine the cause of malformations, the laboratory of morphology and embryogenesis is studying DNA and RNA, glycogen and phosphatose in the cells of the uterus, vagina and glands of internal secretion during various stages of the menstrual cycle and of pregnancy. Also being studied is artificial embryogenesis and metabolic respiratory activity in early embryos using the Warburg technique.

The laboratory of pathophysiology is trying to reproduce human disease in animals. Rats are put in a water-filled tank and the platform is intermittantly and rhythmically depressed and elevated. When depressed, the rats almost drown before they can scramble out of the water. This stress reaction is to produce experimental neuroses. Another group was subjected to a stress reaction through being constantly vibrated. Neurological injury produced and the effect on ovarian function are being studied in these animals.

This laboratory has studied the effect of ultrasonic waves on the ovary. It is said to have a beneficial three-way effect: (1) micromassage; (2) production of internal heat; and (3) a chemical and physiological change in the ovary. This method is in actual therapeutic use. Women with infection of the ovary or adnexa are brought into the laboratory and receive ultrasonic treatment that causes no sensation they can feel but is said to be beneficial. The criterion for improvement is the clinical evaluation of the gynecologist.

An experiment was seen in which an extremely fine electrode was being introduced into certain parts of the brain to determine the effect of stimulation on ovarian function.

White mice were being studied to determine th effect of vaginal temperature on the sperm. Th temperature varied with the menstrual cycle. I castrated animals, the temperature was very lov and immature animals had the same low tempera ture. If folliculin is given the temperature rise during the period of induced bleeding.

The oxygen consumption of mice wa determined by placing them in a tiny chamber an was found to correlate closely with the activity o the sexual organs.

As can be judged by the foregoing, the delega tion spent much time in each of a number of lab oratories. There was marked shortage of spac with laboratories set up in corridors, cold porche and vestibules. Although this institute is onl 2½ years old, it has great promise and is beyon doubt the most stimulating institution visited The director is vigorous and alert and has selecte a large group of young, enthusiastic workers we acquainted with modern techniques. Each lab oratory was directed by one of these young work ers, a specialist in the subject, and so eager to te of studies that the delegation found it difficult t get away.

Staff of Institute of Physiology and Pathology of Women, Tbil

Director: Professor Josef Zhordania.
Methodology-Organization: Dr. Chantladze, Dr. Kho shova, and Dr. Mtchedlisvili.
Sociology: Dr. Bakhradze.
Clinical Department: Dr. Gverdtsiteli.
Endocrine: Dr. Bolkvadze.
Clinical Cytology: Dr. Sakvarelidze.
Head of Polyclinic: Dr. Charushvili.
Animal Hospital: Dr. Sozashvili.
Experimental Pathology: Dr. Godtseridze.
Biochemistry: Dr. Tkeshelashvili.
Androgens: Dr. Begiashvili.
Embryology: Dr. Machovaryanin.
Pathology Physiology: Dr. Dediguri.

Chapter 34

Institute of Obstetrics and Gynecology, Tbilisi, Georgia S.S.R.[1]

Administrative Structure

This institute is administered by a director and two assistant directors. Departments include one on methods and organization; first obstetrics; second obstetrics; post-delivery diseases; nonoperative gynecology; operative gynecology; newborn and premature nursery.

Professor Shaiva Koridze, director of the Institute of Obstetrics and Gynecology, Tbilisi, and Dr. R. Nikogosva, chief of the Newborn Department.

The laboratories for research and diagnosis include biochemical (research), under Dr. Varazi; physiological (research); pathological (research); bacteriological (diagnosis and research), under Dr. Gridnova; clinical diagnosis (diagnosis and research); serological and vaginal smears (diagnosis; miscellaneous (X-ray, physical therapy, blood bank, pharmacy, animal house, record room).

The professional staff consists of 5 doctors of medical sciences, 3 dozents, 16 senior scientific workers, 39 scientific workers, 19 auxiliary personnel, and 1 lawyer.

Functions of Institute

This institute is responsible directly to the Minister of Health, Georgia S.S.R. Its primary function is to serve as an overseer or supervisor of the level of obstetrics and gynecology practiced in the republic. The staff also does research and serves as consultants. Its members deliver lectures and conduct seminars for medical and ancillary personnel.

If the staff from this institute should observe personnel in a rayon who need refresher courses or further training, those particular persons are referred here or sent to the large medical institutions in the rayon. Tbilisi has its own qualifying institution for *aspirantura* and other graduate training. Occasionally, doctors from several rayons will come here for refresher training in operations and difficult cases. Also, if any doctors in the rayon want to do research, they may do it here with a scientific worker and use the results for a thesis for either the candidate of medical sciences or doctor of medical sciences degrees. At present, several doctors are doing this.

The Institute also helps to organize sessions and conferences on infant mortality from various causes. At these sessions, papers and other research studies are presented. The Institute publishes brochures, letters, and other materials to inform doctors and institutions in the republic about new research and developments. The Institute also holds regular clinical-pathological conferences on all maternal deaths, stillbirths, and neonatal deaths. These deaths are discussed and reviewed by leading doctors on the staff.

Research

Research studies include the problems of stillbirths, toxemia, care of newborn, fertility research for optimal use of personnel, and others.

Studies are made of the female reproductive organs from birth onward in order to learn how to increase fertility. Research studies during pregnancy include complications of pregnancy and their effects upon the fetus. They are especially concerned with preventing intra-uterine asphyxia and death of the mother and/or child.

[1] Visited November 2, 1960.

Infertility studies are directed particularly toward determining its pathogenesis. The research on the newborn includes birth injuries, hemolytic diseases, and care of the premature infant. In studies of female hygiene, the Institute workers are studying the types of work women can safely perform during pregnancy. They also are studying the effects of the psychoprophylactic lessons.

10 Problem Areas

The Academy of Medical Sciences of the Georgia S.S.R. has suggested 10 areas or problems that merit investigation. These are: organizational pattern for medical services; toxemia of pregnancy; incidence of disease during pregnancy; management of delivery and the alleviation of pain; physiology and pathology of the newborn; inflammatory diseases of pregnant women; climacteric problems; infertility; prophylaxis of cancer of female sex organs; and women and girls' sex hygiene.

The Institute certifies and reviews the work on the problems for the Ministry of Health, especially when financial support is being sought.

Obstetrics and Gynecology

The Institute has 2,500 to 3,000 deliveries a year, and beds for care of patients are as follows: 100 obstetric; 50 operative gynecology; 30 nonoperative gynecology; 20 post-delivery disease; 100 newborn, and 20 prematures.

The performance figures are seven per 1,000 live birth overall mortality of all newborn; 1.7-percent stillbirth ratio; 60-percent prematurity ratio; 4.3-percent mortality of all prematures.

No Maternity Consultation Clinic

There is no maternity consultation clinic held at this institute. The Institute is responsible for the deliveries, however, of all mothers in this district of the rayon plus any referrals made to it from five other maternity homes in the rayon. It also manages the delivery of all pathological pregnancies which are referred here from neighboring communities.

Since the mother delivers here but has received her antenatal care in a different building, the question was raised about her prenatal records and how they were transferred to the Institute. When the expected date of confinement approaches, the mother receives an exchange card from the consultation clinic which has a summary of her prenatal history. She presents this when she delivers. If a woman from this district should deliver before she has an exchange card, her record would be sent from the clinic as soon as possible—probably the day *after* she delivered. This type of "drop-in" consists of not more than three or four cases a month, or about 1 to 2 percent of all admissions to obstetrics.

Pediatric physician gives a newborn its initial physical examination under the watchful eye of the chief of the Newborn Department, Dr. Nikogosava, at the Institute of Obstetrics and Gynecology, Tbilisi.

Flies Present

When the mother appears at the Institute, her temperature is taken immediately. If her temperature is slightly elevated, she is routed upstairs to the Second Obstetrics Department. This means that there is a separate nursery and delivery room for such mothers. In fact, if her temperature is above 38.5° C., there is even another delivery room for her. This is used 12 to 13 times a year. If the infant's temperature is also elevated, there is a separate cubicle in the nursery for him. There

were two cribs in each of these isolated cubicles. The remainder of the nursery had about 12 cribs—and several flies!

The observers saw the area servicing the pathological pregnancies and the Operative Gynecological Department. In the latter department, such things as the first stage of cancer are treated. More advanced cases of cancer would go to the Oncological clinic.

Experiment Described

Dr. Chakhava described an experiment which the Institute conducted upon the effectiveness of psychoprophylactic lessons. A reprint (in Georgian) was presented to the observers.

The experiment consisted of comparing the value of potassium, sodium, magnesium, and phosphorous both before and after delivery in two groups of about 50 women each. One group of 50 women had the usual psychoprophylactic lessons and the control group of about 40 to 50 women had been prepared by a maternity consultation clinic without the lessons.

It seemed that the value of psychoprophylactic lessons had been proved because the results were "better" in the experimental group. (No indication was given as to what constituted "better" or improvement in the electrolytes measured.) There was no attempt made to see if the control and experimental groups were the same age, parity, socio-economic level, working status, had similar diets, and whether, in fact, they had been handled by the same personnel even at the same time of the year. The use of randomization procedures and double blind techniques were not recognized by the investigator as necessary components in such clinical experiments and their absence was not considered.

A detailed listing of 26 specific problems that were studied under the ten areas mentioned earlier was read to the observers. The titles indicated that much of the research was of a descriptive survey type and not concerned with any analytic or experimental aspects.

Staff of Institute of Obstetrics and Gynecology Tbilisi Georgia S.S.R.

Director: Professor Shalva Kezidze
Chief, Obstetrics: Professor Chakhava
Chief, Gynecology (operative): Professor Papiashvili
Chief, Gynecology Conservative [illegible] Professor Tsagarelli.
Chief, Methods and Organization: Docent Zurab Gasi
Chief, Second Obstetrics Department: Docent Machitadze
Chief, Pathology Department: Docent Devdariani.
Senior Scientific Worker: Docent Kandelaki
Assistant Director, Scientific Work: Docent Dzagania Dyindyaradze.
Chief, Newborn Department: Docent Nik Javakhi
Chief, Physiology Department: Docent Nebieridze

Chapter 35

First United Children's Hospital of the City of Tbilisi, Tbilisi [1]

Structure of the Hospital

Of the four children's hospitals in Tbilisi, this is the principal one. Its medical department has 100 beds. Of these, surgery has 60; eye, ear, nose, and throat, 30; and neurology, 10. These serve children ranging from newborns to those 16 years of age. Each department has a staff of professors, dozents, and assistants.

There are the usual supporting services: X-ray, physiotherapy, clinical diagnosis, biochemical and bacteriology laboratories, and a blood bank. (Pathology work is done at the Central Medical Institute.) The hospital conducts two polyclinics, or outpatient departments, each with eight specialized medical consultation sections. The individual pediatrician cares for 830 children in his section, either through home visits or by seeing them in the polyclinic.

Also a Medical Institute

This hospital also is a medical institute affiliated with the medical school pediatric faculty in programs for the training of undergraduate and postgraduate students. Sixty pediatricians are graduated each year by the pediatric faculty. Students come here for practical training, in their first and second years, for 2-week periods twice a year. In the third year, they act as assistants in the outpatient department for 1 month. In their fifth and sixth years, they work as clinical clerks from 9 a.m. to 1 p.m. and return to the medical school for 2 hours in the afternoon.

The postgraduate training offered is a 2-year course for pediatric *ordinatura* and a 3-year course for pediatric *aspirantura*. The number of postgraduate students offered this advanced training is determined by the Minister of Public Health of the Republic after consultation with the Scientific Council of the Ministry. At the time of the delegation's visit, there were two ordinants and one aspirant in training at the hospital. graduation, ordinants usually return to rayon to practice, and aspirants begin trainir an academic career.

Dean Describes Program

The delegation was fortunate in having dean of the medical school pediatric faculty part in the discussion. As a result, conside time was spent in learning details of the trai of pediatricians.

In 1918, the University of Tbilisi had n special schools or faculties, including one medicine. In 1932, a reorganization took p and medicine was separated from the unive and set up as a separate medical institute. Medical Institute has three faculties: one public health, one for therapeutics, and one pediatries.

The Ministry of Education is experimen with a program that will give the student 8 y of primary school. For the next 3 years, secondary schooling will be combined physical work in a field related to the stude plans for his ultimate life's work. After t 11 years (rather than the present 10 years), student then will apply to the medical school

The delegation was told that higher educa is planned for a third of the population. The maining two-thirds are destined for the la force. So much depends on the child's sch record, therefore, that parents' committees wa the school and teacher very closely.

Medical students come from all over Rus After their 10 years of primary and second schooling, they take competitive examinations admission to the Medical Institute. For the f 3 years, students in all faculties take essentia the same courses. The basic studies for pediat students, however, are slanted toward child under 15 years of age.

[1] Visited November 4, 1960.

In the first 3 years, anatomy is taught for 3 semesters, during which the pediatric students study the anatomy of the child. Students are divided for practical work into groups of 6 to 10, and the delegation was given the impression that they do conventional anatomical dissections. Anatomy is studied by systems. Other courses include physiology, histology, chemistry, pathological anatomy, and pharmacology.

During the first 3-year period, 2-hour lectures and 2 seminars a week are devoted to cultural courses. In order to understand medical terminology, 2 semesters of Latin are required. Students also must continue for 3 years the foreign language (French, German, or English) started in secondary school. Biology, Marxism, Leninism, and political economy are other courses. In addition, students form circles that meet in the evening for general discussion, to hear lectures, and to see educational films.

In the fourth year, public health is emphasized, and attention is paid to pediatric aspects such as school hygiene. In the fifth year, students are divided into small groups and go to the hospitals for clinical training and lectures in pediatrics, which is covered by systems. The sixth year is all pediatrics. In their clinical work in the hospital, students work in both the medical and surgical wards. They assist at operations and occasionally do one themselves. They perform medical work upon patients and keep progress notes. They also take part in medical conferences.

A group of fifth year medical students with their instructor, Dr. Koridze, at First Children's Hospital of

obstetrics and gynecology in their last 3 years—in contrast to the 6 semesters in pediatrics for those in the pediatric faculty. There is no special faculty for training obstetricians and gynecologists. If a student wants more training in these areas, it is given in special evening assignments.

Dictated From Moscow

The medical school curriculum is dictated from Moscow by the Ministry of Higher Education. Oral examinations are given in every subject at the semester end. The content of these examinations is determined by the local medical school.

If a student fails in a single subject, he must repeat the entire year. At the conclusion of the 6 years, all students must take the state examinations for a certificate to practice medicine. These examinations are prepared in Moscow and are given simultaneously all over the Soviet Union. If a student fails the final examination, he may repeat the course and take the examination the following year. Or he may work as a feldsher or in some other medical capacity.

On graduation, the student does not become a doctor but is called a physician. Many more years of work are required through the *ordinatura* and *aspirantura* training before the successful candidate wins the Doctor of Medical Sciences degree. The average age of the candidate achieving this doctorate is 40 years.

Country Practice Assigned

On graduation, every physician (except 1 or 2 percent—the "very bright") must spend 3 years in country practice in assigned locations. In making the assignments, the Ministry takes into account the region in which the married physician lives and whether or not the woman physician has children.

Eighty-five percent of the physicians continue to practice at this level of training but return every 3 to 4 years for refresher courses lasting from 4 to 6 months. Fifteen percent return for *ordinatura* or *aspirantura* training. If a vacancy for an *ordinatura* or *aspirantura* occurs in a hospital, the fact is advertised, and those interested may apply. Acceptance is on the basis of past record and a competitive examination. If a physician desires to change his job or location, an application is made to the Ministry and the decision is based on the applicant's record.

Clinical Research

The hospital has no scientific research program, but there is clinical research based on the material available in the institution.

The delegation was shown the hospital's tabulated summary of its research program that had been approved by the Scientific Council of the Ministry. Some of the subjects being studied: (1) the consequences of trauma to the skull; (2) long-term results in the treatment of congenital dislocation of the hips by conservative versus operative treatment; (3) a 10-year followup of patients with intestinal pathology such as appendicitis; (4) kidney stones; (5) mineral and water metabolism in rheumatic fever; (6) variations in the gluathione content of the blood in rheumatic fever treated in the open air versus that treated indoors; (7) biochemical findings in the blood of children with tuberculosis; (8) the study of antibiotic agents in treating tuberculous meningitis; (9) the study of blood enzymes in animals infected with tuberculosis and treated with different antibiotics.

Ordinatura and *aspirantura* postgraduates students were preparing theses on such subjects as (1) a 10-year study of the clinical findings and treatment of rheumatic fever; (2) a 15-year study of patients with pleurisy, and (3) a 20-year study of patients with accidental poisoning.

Various departments of the hospital were visited. In the ear, nose, and throat section the delegation was told a very conservative attitude is taken toward operating on tonsils and adenoids. On indication, they may do either a partial operation or complete enucleation. The incidence of mastoid operation is very low—there being but 12 operations for this condition in all of Georgia the past year.

All types of operations except brain tumors are undertaken on the surgical service. Brain tumor operations were formerly done here but now are sent to the Institute of Neurology. Cardiac surgery is just beginning. Again, the delegation found a high incidence of congenital hips requiring operative treatment. An amazing number of children with renal stones are seen, and the delegation was shown a large box filled with stones removed at operation. The youngest child they had seen with renal stones was 1½ years. The condition was said to be most common in the years from 10 to 12 and especially in hospitalized patients.

The hospital has wards for newborn infants but there were no patients when the delegation visited it. We asked as to their methods of making early diagnosis of possible neurological injury in the newborn and in infancy. They replied that they relied on the pediatrician's examinations, but that it was really the mother who detected early defects and brought the child to the polyclinic. In the clinic, the child would be seen by a neurologist who would include electroencephalograms in his workup.

Staff of First United Children's Hospital of the City of Tbilisi, Tbilisi

Director: Dr. M. Tvaradze.
Chief of Surgery and Orthopedics: Professor Kokochashvili.
Chief of Inpatient Department: Dr. Tokhadze.
Chief of Medical Department: Dr. Koridze.
Assistant Chief of Medical Department: Dr. Sharashidze.
Chief of Eye, Ear, Nose, and Throat Department: Dr. Shonya.

Appendix A

Publications Brought Back

Books and Pamphlets Received

1. Academy of Pedagogical Sciences, R.F.S.S.R.: The Reports of the Scientific Session on Defectology. Moscow, 1960, 165 pp.
2. Ausiender, L. B.: For What Reason? Why? (Pictures for storytelling.) Moscow, Institute of Sanitary Enlightenment, 1960, 12 pp.
3. Bartels, A. B., Granat, N. E., Nogina, O. P., Salgannik, G. M., Smirnov, G. I., and Stepanov, L. G.: A Course of Lectures for Pregnant Women. Moscow, Medgiz, 1957, 235 pp.
4. Berkovits, R. N. and Eyges, N. P.: A Diary for Mothers. Moscow, Institute of Sanitary Enlightenment, Ministry of Health, U.S.S.R., 1959.
5. Bogdanov, I. L.: Poliomyelitis. Kiev, Medgiz, 1060, 282 pp.
6. Bogdanov, I. L.: Scarlet Fever. Kiev, Medgiz, 1058, 812 pp.
7. Bogdanov, I. L.: The Counter-Epidemiological and Therapeutic Regimens in Hospitals for Patients with Poliomyelitis. Kiev, Medgiz, 1959, 180 pp.
8. Central Statistical Bureau of the Council of Ministers of the U.S.S.R.: Vital Statistics. Moscow, Gosstatizdat, 1960, 272 pp.
9. Cheremushkina, N. A.: A Correspondence Course for Mothers—12 Lectures. Moscow, Medgiz, 1956, 240 pp.
10. Dyachkov, A. I., Korovin, K. G., Lurla, A. R., Martsinovskaya, E. N., and Morozova, N. G.: Proceedings of the Scientific Session on Defectology. Moscow, Academy of Pedagogical Sciences, R.F.S.S.R., 1958, 480 pp.
11. Dyachkov, A. I. and Lubovsky, V. I.: Proceedings of the 2d Scientific Session on Defectology. Moscow, Academy of Pedagogical Sciences, 1959, 210 pp.
12. Dulnyeva, G. M. and Lurla, A. R.: The Principles of Selecting Children for Auxiliary Schools. Moscow, Academy of Pedagogical Sciences, R.F.S.S.R., 1960, 244 pp.
13. Garmasheva, N. L.: The Pathophysiology of Intrauterine Development. Leningrad, Medgiz, 1959, 323 pp.
14. Gubert, K. D. and Riss, M. G.: Gymnastics and Massage for Young Children. Leningrad, Medgiz, 1958, 142 pp.
15. Gurina, R. N.: Home Care of the Sick Child. Moscow, Institute of Sanitary Enlightment, 1959, 40 pp.
16. Institute of Nutrition, Academy of Medical Sciences, U.S.S.R.: The Nutrition of Children. Moscow, Gostorgizdat, 1958, 239 pp.
17. Lurla, A. R.: The Mentally Retarded Child. Moscow, Academy of Pedagogical Sciences, 1960, 202 pp.
18. Ministry of Health: The Curricula for Higher Medical Institutes. Moscow, Medgiz, 1957, 43 pp.
19. Ministry of Health: The Curricula for Medium Medical and Pharmaceutical Institutes. Moscow, Medgiz, 1960, 105 pp.
20. Ploticher, V. A.: The Psychoprophylactic Preparation of Pregnant Women for Childbirth. Moscow, Institute of Sanitary Enlightenment, 1959, 70 pp.
21. Morozkin, N. I.: Influenza. Kiev, Medgiz, 1059, 309 pp.
22. Riss, M. G., Tur, A. F., and Kvaska, V. D.: Gymnastics for Children of the Breast Feeding Age. Moscow, Institute of Sanitary Enlightenment, 1959, 32 pp.
23. Snegiryeva, Z. K.: A Museum Exhibit of Public Health. Leningrad, Institute of Sanitary Enlightenment, 1959, 55 pp.
24. Ternovsky, S. D.: Reparative and Plastic Surgery in Children. Moscow, N. I. Pirogov 2d Municipal Medical Institute, 1958, 161 pp.
25. Tur, A. F.: A Handbook on Dietetics for Children of the Early Age Group. Leningrad, Medgiz, 1959, 300 pp.
26. Tur, A. F.: Propaedeutics of Pediatric Diseases. Leningrad, Medgiz, 1954, 361 pp.
27. Tur, A. F.: The Care of the Young Infant. Leningrad, Medgiz, 1050, 30 pp.
28. Tur, A. F.: The Physiology and Pathology of the Newborn. Leningrad, Medgiz, 1955, 417 pp.
29. Yershov, F. S.: Sanitary Enlightenment in the U.S.S.R. Moscow, Institute of Sanitary Enlightenment, 1960, 60 pp.
30. Zborovskaya, F. I., Tabakova, I. F. and Ostrovskaya, I. M. The Healthy Child. Moscow, Institute of Sanitary Enlightenment, 1900, 32 pp.
31. Zhordania, I. F.: Textbook of Obstetrics. Moscow, Medgiz, 1959, 643 pp.
32. Zotov, K. V., and Konchalovskaya, N. P.: Pictures for Children. Moscow, Institute of Sanitary Enlightenment, 1959, 10 pp.

Pamphlets for Purposes of Propaganda

1. How To Take a Walk With a Child.
2. What a Child's Bed Should Be Like.
3. How To Give a Child Medicine.
4. How To Put Drops in a Child's Eyes, Nose, or Ears.
5. Correspondence Courses for Mothers.

Lecture 1: Maternal and Child Welfare in the U.S.S.R.

Lecture 3: Physical Rearing of Children of the Preschool and Early School Age Group.
Lecture 8: Infectious Diseases of Childrcn.
Lecture 9: Parasitic Diseases of Children.
Lecture 10: Tuberculosis in Children.
Lecture 12: The Home Care of the Sick Child.

6. Protect Children from Rickets, by Zabludovskaya, E. D.
7. Pulmonary Infections In Young Children, by Dombrovskaya, Yu, F.
8. Nutrition of the Pregnant and Breast Feeding Woman, by Marshak, M. S., and Borlnskaya, E. K.
9. How to Provide Healthy Sleep for a Child, by Simson, T. P.
10. How To Measure and Record Temperature.
11. How To Apply Mustard Plaster to a Child.
12. How To Apply a Compress on a Child.
13. How To Give a Child Medicine.
14. How To Apply an Ice Pack on a Child.
15. A Memo to Mothers on the Care of the Newborn.
16. A Memo to Pediatricians on Prophylactic Immunizations.
17. How To Prevent Pulmonary Infections in Children.
18. Daily Recommended Regimens for Children:
    from 1½ to 3 months;
    from 3 to 5 months;
    from 5 to 9 months;
    from 9 to 14 months;
    from 14 to 18 months.
19. Keep Children From Fires.
20. A letter for Parents of First Grade Students on the First Day of School.
21. A Letter for Parents of Kindergarten Children Prior to Starting School.

Forms and Records

1. Individual Chart for the School Child: Ministry of Health, U.S.S.R., Form No. 26 and Supplement.
2. Record of Prophylactic Immunizations: Ministry of Health, U.S.S.R., Form No. 63.
3. Information on a Birth: Ministry of Health, U.S.S.R., Form No. 103.
4. Individual Record of Pregnancy and Delivery: Ministry of Health, U.S.S.R., Form No. 111.
5. Record of Child's Development: Ministry of Health, U.S.S.R., Form No. 112.
6. Exchange Record of the Maternity Home or Maternity Department of a Hospital: Ministry of Health, U.S.S.R., Form No. 113.
7. Information on Newborn: Research Institute of Obstetrics and Gynecology, Moscow.
8. Record of the Newborn's Growth and Development: Ibid.
9. Laboratory Form of the Sanitational and Epidemiology Station of the Sverdlovsk Rayon of Moscow.
10. Accident Report Forms of the G. I. Turner Orthopedic Institute of Leningrad.
11. Prescription blank.

Appendix B

Forms Used in U.S.S.R. in Health Activities Relating to Maternal and Child Health

Contents:

	U.S.S.R. code numbers
1. Birth certificate	U.S.S.R. Form No. 103.
2. Death certificate (stillbirth included)	Unidentified.
3. Morbidity report form	U.S.S.R. Form No. 58.
4. Notice to mother to attend children's polyclinic	Unidentified.
5. Mother's record in maternity consultation clinic	U.S.S.R. Form No. 111.
6. Mother's exchange cards to go from consultation clinic to hospital, and back again, and from hospital to children's polyclinic	U.S.S.R. Form No. 113.
7. Hospital record of delivery and post-partum period	U.S.S.R. Form No. 96.
8. Hospital birth record of child	U.S.S.R. Form No. 97.
9. Health record of child in school, nursery, kindergarten	U.S.S.R. Form No. 26.
10. Doctor's working record of child (in kindergarten)	Unidentified.
11. Notice about contraceptive clinic for women seeking abortion	Unidentified.
12. Child's folder on polyclinic	U.S.S.R. Form No. 112.

Appendix C

Research Activities in the Institutions Visited

The following list includes the things that the delegation was told were being investigated in the hospitals visited. Where work was observed, a description can be found under the appropriate institution.

Central Research Institute of Obstetrics and Gynecology, Moscow

Possibility of prevention of staphylococcic infections by prophylactic use of staphylococcic antitoxin.

Methodologic organization for care of pregnant women throughout the U.S.S.R.

Experiments related to psychoprophylactic preparation for delivery.

Animal experiments relating conditions existing during pregnancy to fetal development.

Biochemical and morphological experiments designed to correlate "reticular" development in the brain stem to the time of appearance of conditioned reflexes.

Study of normal and abnormal infants under various test situations by means of the electroencephalograph.

Investigation of problems related to Rh immunization.

Study of abnormal endocrine states including dysfunctional bleeding, menopausal hypermenorrhea and sterility.

Institute of Obstetrics and Gynecology of the Academy of Medical Sciences of the U.S.S.R., Leningrad

Relation of the central nervous system to various pathologic states.

Conditioned and nonconditioned reflexes in the newborn.

Planned birth and the elimination of pain.

Methods of improvement of psychoprophylaxis.

Reflex mechanism underlying the birth process.

Biochemistry and composition of uterine muscle especially in connection with inertia.

Etiology of anomalies of the fetus.

Effect of 15–17 hours sleep on postpartum patients.

Methods of improving midwife training.

Special methods of resuscitation and the neurologic syndromes that arise following asphyxia.

Problems of perinatal pathology.

Prophylaxis of epilepsy.

Prevention of staphylococcic infections by use of antitoxin and toxoid.

Cause of intrauterine infections.

Pathogenesis of infertility and climacteric neuroses.

Diagnosis and study of fetal disease by simultaneous phonocardiographic and electrocardiograph recordings on mother and fetus.

Relation of asphyxia and central nervous system damage to hypoglycemia.

Level of fetal hemoglobin in normal and pathologic states.

Institute of Obstetrics and Gynecology, Tbilisi

The changes in the unsaturated fatty acids in different stages of pregnancy.

The value and application of long needles in puncturing the amniotic sac.

Application of glutamic acid in uterine inertia.

Outcome of the fetus in connection with severe extragenital illness.

Statistical study of institute cases.

Course of pregnancy and state of the fetus in maternal anemia.

Problem of preventing subinvolution of the uterus.

Studies on lactation.

Proper method of caring for the umbilical cord.

Prevention of atonic postpartum bleeding.

Endocrine dysfunction studied by vaginal cytology.

Influence of testosterone propionate and vitamin E on the development of the premature infant.

Motor function of the infant's stomach in relation to frequency of feeding.

Long range psychological and psychological results after forceps delivery.

Peculiarities of protein and water metabolism in the newborn of mothers with different pathologic conditions.

Physical development of the premature infant in terms of the change between 1947–50 using the material in the institute.

Improvement in maternal and fetal mortality through early diagnosis and treatment of toxemia in second half of pregnancy.

Treatment of cardiovascular disease in pregnancy.

Preliminary studies on the intrauterine development of the fetus and influence of asphyxia.

Study of methods to decrease neonatal mortality especially that caused by birth injury and hemorrhagic disease.

Research on the pathogenesis of sterility.

Problems associated with the type of work a woman carries on in pregnancy.

Studies to improve the psychoprophylactic method of childbirth.

Research Institute for the Physiology and Pathology of Women, Tbilisi

Clinical studies on primary and secondary infertility.

Disorders connected with menstruation.

Pathologic menopause.

Investigation of male causes of infertility.

Surgical methods of improving the state of the male and female genital organs.

Transplantation of sex organs.

Diagnostic tests for infertility.

Endocrinologic aspects of sterility, spontaneous abortion, ovarian function, and menopause.

Nevons control of mechanisms regulating normal and pathologic ovarian cycles.

Relation of abnormalities of the sexual cycle to various pathologic states in the female.

Relations of the functioning of the gustatory and olfactory receptors to the menstrual cycle.

Effect of ultrasonic therapy on inflammation of the genital system.

Biochemistry of menstrual cycle.

Biochemistry of fertilizing potentialities of sperm.

Regenerative capacity of testicular tissue.

Relation of the DNA, RNA, glycogen and phosphatase in cells of uterus, vagina, and glands of internal secretion to different phases of the menstrual cycle and to pregnancy.

Metabolic respiration in the embryo as studies with the Warburg apparatus.

Effect of stress on ovarian function of the rat.

Institute of Maternal and Child Welfare in the Third City Specialized Children's Hospital, Kiev

Causes, methods of prevention and treatment of intrauterine asphyxia.

Prophylaxis of virus infections, especially influenza in pregnancy.

Prevention and treatment of postmaturity.

Institute of Pediatrics of the Academy of Medical Science, Moscow

Treatment and prevention of tuberculosis.

Severe gastrointestinal disturbances.

Heart disease as a consequence of rheumatic fever.

Leukemia and other blood diseases.

Acute infectious diseases of children, especially pneumonia.

Metabolic diseases.

Development of the capillaries of the brain.

Injury to the brain in experimental animals especially as related to abnormal maternal endocrine states and transmission of noxious substances through the placenta.

Development of the brain as related to the presence of certain substances in amniotic fluid.

Pathology of the newborn, especially the premature.

Development of conditioned reflexes in children less than three years of age.

Institute of Pediatrics, Leningrad

Postnatal development of the brain as a response to conditioning stimuli.

Ionized milk as an ideal food for infants.

Methodology for improvement of muscular activity.

Etiology of cytomegalic inclusion body disease.

Relation of message and exercise to physical development of infant and small child.

First Children's Hospital of the City of Tbilisi

Consequences of trauma to the skull.

Long-term results in the treatment of congenital dislocation of the hips by conservative versus operative treatment.

Ten-year followup of patients with intestinal pathology such as appendicitis.

Kidney stones.

Mineral and water metabolism in rheumatic fever.

Variations in the glutathione content of the blood in children with rheumatic fever treated in the open air versus those kept indoors.

Biochemical findings in the blood of children with tuberculosis.

Study of antibiotic agents in treating tubercular meningitis.

Study of blood enzymes in animals infected with tuberculosis and treated with different antibiotics.

Ten-year study of the clinical findings and treatment of rheumatic fever.

Fifteen-year study of patients with pleurisy.

Twenty-year study of patients with accidental poisoning.

United Hospital of the October Rayon and Polyclinic, Kiev

Use of ionized milk as a substitute for breast milk.

Various aspects of leukemia.

Identification of a new disease caused by a hemolytic staphylococcus.

Institute of Defectology of the Academy of Pedagogic Science of the Russian Federation of Soviet Republics, Moscow

Identification of pathophysiologic characteristics of children with various defects such as blindness, deafness, mental deficiency, and so forth.

Study of children with motor defects.

Study of the psychologic states of children with various defects.

Institute of Infectious Diseases of the Academy of Medical Sciences, Kiev

Research consists of investigation of various aspects of influenza, infectious hepatitis and poliomyelitis.

Institute of Nutrition of the Academy of Medical Science of the U.S.S.R., Moscow

The Institute presumably carries on investigations of various aspects of nutrition but the only ones discussed with us were those concerned with pregnancy and small children. These were related primarily to the establishment of optimum levels of intake of various foods and vitamins and were of work done in the past. No research now underway was described.

Turner Scientific Research Institute of Children's Orthopedics, Leningrad

Congenital malformations.

Poliomyelitis.

Spastic paralysis.

Traumatic injuries and other pathologic defects.

Appendix D

Necessary Adjustments in Vital Statistics Rates of U.S.S.R.

In an earlier part of this section, the definitions of live birth, fetal death (vis-a-vis unreportable miscarriage), and prematurity followed in U.S.S.R. have been reported to differ from those established by the World Health Organization and followed by the United States. The merits of one system over the other are beyond the scope of this report. Some considerations will be given, however, to the magnitude caused by the different systems to enable comparisons to be made between the vital statistics rates of the two countries.

The definitions practiced by the Soviet authorities will be seen to have an overall tendency to lower the birth rate, fetal death rate and ratio, prematurity rate, and the infant and neonatal mortality rates. These will be discussed in general terms and special attention will be given to an investigation of the probable magnitude of some of these changes.

Birth Rate.—The birth rate will be lower when measured by the U.S.S.R. system of definitions despite the fact that the Soviet Government is desirous of demonstrating a high rate of birth among its citizens.

Those events which are considered by the World Health Organization to be live births but where the birth weight is under 1,000 grams will not be reported as a birth by Soviet officials unless the child lives or is discharged alive from the maternity home or prematurity center. In the U.S.S.R. birth of a child under 1,000 grams is considered equivalent to a miscarriage and is not reported unless the infant survives.

The effect of this use of 1,000 grams as the threshold value of reporting live births is that approximately 0.5 percent [1] of all live births will not be reported since there is about 95 percent neonatal mortality among this low-weight group. Thus, the birth rate as reported in U.S.S.R. should be multiplied by 1.005 for the underreporting of small infants. This is not a large correction factor for the live births but does represent a substantial consideration when neonatal and infant mortality rates are determined. These effects will be considered in a subsequent paragraph.

Other natal events which are considered as live births under World Health Organization rules but which are reported as *fetal deaths* in U.S.S.R. occur when an infant does not cry or breathe but does have a cord or heartbeat and/or movement of a voluntary muscle. Assuming that not more than 10 percent of the infant deaths in the first hour of life are characterized by this phenomenon, its influence upon the birth rate can be determined approximately. About 1 percent of all infants born live die in the first day, and of these, about one-fifth die during the first hour. Thus, the U.S.S.R. live births are underreported for this factor by approximately (0.01) (.2) (.10)=0.02%. Since this is the upper limit of the influence of this factor upon the birth rate, only a negligible error will be made by not adjusting the Soviet reported birth rate for this factor. The result of classifying these events as a fetal death, however, will increase that rate slightly. It also exerts a reduction in the Soviet reported neonatal and infant mortality rates and these effects will be considered later.

Prematurity Rate.—The use of 1,000 grams as the minimum for a reportable live birth means that about 95 percent, or 6.2 percent of all prematures [2] according to WHO rules will be unreported in the U.S.S.R. both as a live birth and a premature. This means that the numerator of the Soviet prematurity rate is only 93.8 percent of the WHO counterpart, and the denominator of total births is 99.5 precent of its value. Thus to convert the Soviet prematurity rate to that of the WHO definition for this consideration alone, one would need to multiply the U.S.S.R. figure by the factor $\frac{99.5}{93.8}=1.06$. This adjustment is best made, however, in conjunction with another criterion discussed below.

The omission in U.S.S.R. data as live births of all infants who have a cord or heart beat but fail to cry or breathe has been mentioned above in connection with a slight lowering of the birth rate. This group will often weigh less than 2,500 grams and its omission will have a slight effect in artificially lowering the prematurity rate. This probably amounts to a reduction of the premature rate by not more than 0.1 percent of the rate itself, however, and is relatively unimportant in comparison to the adjustments in the prematurity rate made necessary by both the preceding and subsequent factors.

The striking difference in the two definitions of a premature live birth occurs with respect to the Soviet use of crown-heel length as a supplementary measure. Those infants measuring 45 cms. or more in length are judged mature infants in U.S.S.R. The effect of including this additional criterion is such that the two rates are measuring very different entities.

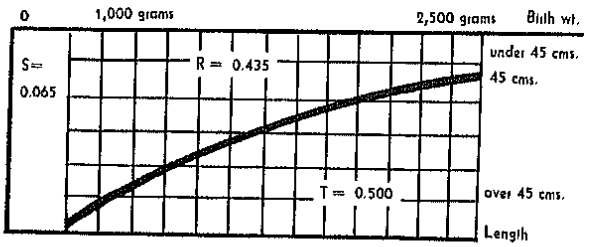
To determine the adjustment necessary to convert one rate into the other, attention must be directed to special studies where the height and weight of the prematures

[1] In the 5-year period from 1950 to 1954 in the United States, about 7.5 percent of all live births were premature and, of these prematures, 6.5 percent were under 1,000 grams in birth weight. Thus, (0.075) (0.005)=0.5% of all births are under 1,000 grams.

[2] Refer to footnote on preceding page.

have been cross-classified. In the North Carolina perinatal mortality study[3] there were 3,094 premature live births of 1,000 grams or more during the 5-year period and 1,975 of them measured 45 cms. or more in length. Excluded are 247 premature live births of under 1,000 grams,[4] since according to the Soviet definition, one should exclude from the numerator and denominator all neonatal deaths (by WHO standards) under 1,000 grams because they would not be reported as a live birth and, of course, not a premature. The resultant ratio, therefore, becomes $\frac{1975}{3694}$=53.5 percent.

It would be convenient to determine one composite correction factor which could be used to multiply the Soviet figure on prematurity to make it comparable to the WHO definition. Such a correction factor must adjust for two important elements, the exclusion of about 95 percent of the infants with birth weights under 1,000 grams, and the exclusion of 53.5 percent of the infants between 2,500 grams and 1,000 grams because they are at least 45 cms. in length. The diagram below is helpful in this respect:



The area marked by the letter S represents the 0.5 percent of premature live births according to WHO standards that weigh under 1,000 grams and none of whom measures over 45 cms. The area marked by T represents those live births between 1,000 and 2,500 grams which measure 45 cms. or more in length. The value of T, viz 50.5 percent was obtained by using the previously demonstrated 53.5 percent of the 03.5-percent live births (by WHO standards) between 1,000 and 2,500 grams. The remainder is R and occupies 43.5 percent of the area.

The Soviet definition of prematurity rate would include numerator all of the live births represented by R percent of the total births under 1,000 grams by S. That is, (R+.05S)=0.435+0.033=0.438 ature births by WHO rules. The denom- Soviet prematurity rate would be all live ed under the U.S.S.R. rules, but owing to een previously indicated, it would be only of the WHO defined figure. Thus, the single factor should be

$$\frac{.005}{.438}=2.27.$$

In other words, wherever the Soviet prematurity rate is quoted in this report, or elsewhere, it should be multiplied by the factor 2.27 in order to make it comparable to the rate as defined in the United States. Thus, the lowest Soviet rate of prematurity, given as 3.5 percent, is actually equal to (3.5%) (2.27)=7.95%.

The factor of 2.27 may seem alarmingly large. Actually, it is a conservative estimate that was based upon the experience in a special North Carolina study of perinatal mortality which contained about 75-percent nonwhite births. If one uses data from other studies of birth weight and length, the resultant correction figure may become larger. For example, use was made of data provided in a private communication from Dr. Edith Potter wherein she reported the experience in Chicago Lying-In Hospital premature live births, giving average length (and standard deviations) by birth weight groups. These figures were confirmed by the averages and standard deviations given recently by Silverman.[5]

By assuming that within each 250-gram birth-weight group, the infants formed an approximate normal distribution according to length, it was possible to determine the proportion within each group which measured 45 cms. or more. These percentages were applied to the distribution of prematures by birth weight in Chicago Lying-In Hospital as reported by Potter,[6] as well as the distribution of prematures in the United States each year from 1950 to 1954. Instead of obtaining the North Carolina figure that 50.1 percent of *all* prematures (including those under 1,000 grams) are 45 cms. or more in length, the new percentages ranged roughly from 58 to 60 percent.

It was decided to use the North Carolina figures on length and weight for reasons other than the fact that they were more conservative. They were based on a larger sample than either the Potter or Silverman data. The average lengths in the Potter data were slightly greater than those given by Silverman but the latter had made certain exclusions from the listing and had included only those who were autopsied. The North Carolina data seemed to present the better estimate under the circumstances.

Fetal Death Rate and Fetal Death Ratio.—The definition of fetal death in U.S.S.R. is such that infants having less than 28 weeks gestation, or weighing under 1,000 grams, or measuring less than 35 cms. are considered miscarriages and not reported. To determine the influence of this restriction upon various indices of fetal mortality as used in the United States, special data from the previously mentioned North Carolina study were employed.

These data were as follows:

Total fetal deaths in study	690
Total under 20 weeks gestation	18
Total reportable fetal deaths according to definition used in many States in United States (based upon 20 weeks gestation)	672

[3] Wells, Henry B., Greenberg, Bernard G., and Donnelly, James F., "North Carolina Fetal and Neonatal Death Study I.—Study Design and Some Preliminary Results," *American Journal of Public Health*, Dec. 1958, vol. 48, no. 12, pp 1583–1595.

[4] It is interesting to note that the proportion of prematures weighing under 1,000 grams in these North Carolina data is $\frac{247}{3694-247}$=6.3% whereas the national figure was approximately 6.5% for this same period of time.

[5] Silverman, William A., *"Dunham's Premature Infants."* Paul B. Hoeber, Inc., New York City, 1961. (Table A13–1.)

[6] Potter, Edith L., *"Maternal Factors in Prematurity," The Pediatric Clinic of North America*, vol. 1, No. 3, August 1954, pp. 515–526.

Total, 20–27 weeks gestation	122
Total, 28 weeks or more gestation, but less than 35 cms. in length	42
Total, 28 weeks or more gestation and 35 cms. or more in length *but* under 1,000 grams	15
Total events not reported as fetal deaths in U.S.S.R.	179
Total events likely reported as fetal deaths in U.S.S.R.	493

Percentage not reported $\frac{179}{672}=26.6\%$.

Percentage reported $=\frac{493}{672}=73.4\%$.

Owing to the fact that only 73.4 percent of the fetal deaths, as defined in most States of the United States, could be reported in U.S.S.R., the fetal death rate in the latter country for this factor alone must be multiplied by $\frac{1.000}{0.734}$, or 1.362. To convert the fetal death ratio of the U.S.S.R. into one conforming to U.S. standards for this factor alone, one must consider that the U.S.S.R. total of live births is underreported by 0.5 percent for those infants born weighing under 1,000 grams. The conversion ratio for this one factor is, therefore, $\frac{0.995}{0.734}=1.356$.

A final factor needing adjustment in the Soviet fetal-death rate and fetal-death ratio takes into account the overstatement of fetal deaths in U.S.S.R., in accord with the reason given earlier in this chapter (heartbeat with absence of breathing). It is estimated that not more than 10 percent of the infants who die in the first hour of life will not cry or breathe even though they manifest other signs of life. According to U.S. experience in the year 1957[7] a total of 825 events would be added to the fetal deaths which had been 69,561. This is an overstatement of $\frac{825}{69,561}=1.19\%$ in the Soviet fetal deaths.

To combine this latter correction with the ones mentioned in the paragraphs preceding it, one should calculate $\frac{1.362}{1.0119}=1.35$, and $\frac{1.350}{1.0119}=1.34$. Thus, the single composite correction is to multiply the Soviet fetal-death rate by 1.35 and the fetal-death ratio by 1.34 in order to derive figures which can be compared to those of the United States. A convenient, rough guide would be to increase the Soviet rates by one-third.

Neonatal and Infant Mortality.—There are two major factors that need to be adjusted in the numerator of the Soviet rates of infant and neonatal mortality in order to make them comparable to those under WHO standards. As pointed out above, the first one occurs because 0.5 percent of all live births under WHO standards will be under 1,000 grams and 95 percent of these infants will likely die before 1 month, but will not be reported as neonatal or infant deaths in the U.S.S.R. Thus, if the letter B represents the number of live births which would be reported in U.S.S.R. if WHO rules were applied the numerator of these two mortality rates is lowered by an amount equal to (0.005) (0.95)B=0.00475B.

[7] *Vital Statistics of the United States*, 1957, vol. I, published in 1959 by National Office of Vital Statistics, Washington, D.C.

The second factor concerns the omission in the U.S.S.R. data on neonatal and infant mortality of those WHO defined live births who die in the first hour of life without breathing or crying. One can safely assume that this group represents (not more than) 10 percent of all those dying in the first hour of life, based on WHO standards. Those who die in the first hour of life represent about 10 percent of the total neonatal deaths, and about 6.7 percent of the total infant deaths, according to WHO definitions. Thus, if the letter N represents the number of neonatal deaths which would be reported in U.S.S.R. if WHO rules were applied, the numerator of the neonatal mortality rate is lowered by an amount equal to (0.10) (0.10) N—0.01N. Similarly, the U.S.S.R. infant mortality rate is lower in the numerator by an amount equal to 0.0067 of total infant deaths according to WHO definition.

Two factors omitted from the numerators of the U.S.S.R. neonatal and infant mortality rates are also missing from the denominator which consists of total live births. That is, those events which by WHO standards would be considered neonatal deaths are also unreported as live births in U.S.S.R.

The composite effect of these corrections can be determined by the following procedure. Let Y represent the neonatal mortality rate that would be determined in the U.S.S.R. by its own standards.

Then,

$$Y=\frac{N-0.00475B-0.01N}{B-0.00475B-0.01N}=\frac{0.99N-0.00475B}{0.99525B-0.01N},$$

or,

$$Y=\frac{0.99\left(\frac{N}{B}\right)-0.00475}{-0.01\left(\frac{N}{B}\right)+0.99525},$$

and the rate which would be reported in the U.S.S.R. if WHO definitions were used is

$$\frac{N}{B}=\frac{0.99525Y+0.00475}{0.99+0.01Y}.$$

This can be simplified considerably. The value of 0.01Y in the denominator is negligible since it is of the order of 0.0002, or less. By dropping this term from computation, one can correct the Soviet neonatal mortality rate to a WHO standard by increasing the reported rate by one-half percent of itself and then adding a flat 0.0048, or 4.8 per 1,000. Thus, given a reported U.S.S.R. neonatal mortality rate of 20.0 per 1,000 live births, one converts this to a WHO defined rate as follows:

$\{(20.0)\times(1.005)\}+4.8=20.1+4.8=24.9$ per 1,000. In a similar way, the conversion procedure for the infant mortality rate can be derived. The result indicates that the reported Soviet infant mortality rate should first be increased by ½ percent of itself and then adding a flat 0.0048, or 4.8 per 1,000. Thus, given a reported U.S.S.R. infant mortality of 42.0 per 1,000 live births, this is converted to a WHO defined rate as follows:

$\{(42.0)\times(1.00107)\}+(4.8)=42.07+4.8=46.9$ per 1,000. It is apparent that the major correction is very simple—simply add 4.8 to the rate per 1,000 live births.

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Sampling and Other Errors in the Adjustments.—The conversion factors given in the foregoing sections are subject to both sampling errors and yearly changes in mortality during the first hour of life, under 1,000 grams, and other relationships among fetal and neonatal deaths with live births.

The effect of sampling errors is probably trivial in all conversion procedures except the ones for fetal deaths and the prematurity rate. The conversion rules were based upon large samples for the United States except in the case of these rates which depended upon the North Carolina data, such as the 3,694 premature live births over 1,000 grams. If sampling errors are considered, the 95-percent confidence internal around the correction ratio for prematurity, which was given as 2.27, would be approximately 2.18→2.37. This narrow range indicates that no serious sampling error will result in using the given conversion ratio. The same holds true for fetal deaths.

The effect of yearly changes upon the relationships used is likely to be negligible during the next 5 years, and perhaps longer. Hopefully, by 1965, all countries will use identical definitions and new conversion rates will be unnecessary.

Summary.—To convert the U.S.S.R. vital statistics rates reported in this document, and elsewhere, into a form comparable to that upon which the WHO bases its definitions, the following correction factors should be used:

Rate	More precise rule	Rough, convenient guide
1. Birth rate	Multiply by 1.005	Ignore correction.
2. Prematurity rate	Multiply by 2.27	Multiply by 2¼.
3. Fetal death rate	Multiply by 1.35	Increase by ⅓.
Fetal death ratio	Multiply by 1.34	Increase by ⅓.
4. Neonatal mortality rate	Multiply by 1.005 and add 4.8 per 1,000.	Add 4.8 per 1,000.
Infant mortality rate	Multiply by 1.00167 and add 4.8 per 1,000.	Add 4.8 per 1,000.

Appendix E

Statements Issued and Inscriptions Signed

October 17, 1960

N. S. Semashko Institute of Public Health, Moscow

The delegation from the United States on maternal and child care expresses its appreciation for the scholarly and informative presentation of this area of care in the U.S.S.R. We give especial thanks to Dr. Alexander Shevilyov and to Dr. Nina S. Yegorova.

STEWARD H. CLIFFORD.

October 20, 1960

Central Research Institute of Obstetrics and Gynecology, Moscow

In behalf of the delegation for the study of problems related to maternal and child health, I wish to thank the members of the Institute for their generosity in giving us so freely of their time. We have been very well impressed with the facilities and quality of medical care. I personally was extremely pleased with the museum of gynecologic specimens. It contains much rare material and is well arranged for teaching.

EDITH POTTER.

October 24, 1960

Chief Institute of Obstetrics and Gynecology, Leningrad

With best wishes on the occasion of the visit of the American delegation for the study of conditions associated with maternal and child health.

EDITH POTTER.

October 25, 1960

Turner Scientific Research Institute of Children's Orthopedics, Leningrad

The Delegation on Maternal and Child Welfare of the National Institutes of Health of the U.S.A., is happy to have had this visit in the Institute founded by your great Professor Turner. In Professor Turner's time there was very close liaison with friends in the United States—we hope our joint interest will renew this friendship. Our interests are in the direction of trying to find the etiology and prevention of cerebral palsy. We admire the excellent work you are doing in very cramped quarters and congratulate you on the prospect of your new institute in 1962. We would like to return and see you there.

STEWARD H. CLIFFORD.

October 27, 1960

Statement for the UK.S.S.R. Radio as Part of a Group of Remarks by Women of Different Nationalities

I am in the U.S.S.R. as a member of a delegation of American doctors to study the organization of public health facilities and the means whereby the health and welfare of mothers and children are assured. All the countries in the world want to make the world safer for mothers and children and to give every child an opportunity to become a healthy productive citizen. It is only when there is worldwide peace that this can be accomplished. Consequently, all doctors hope for and work for peace. It is our wish in visiting the U.S.S.R. that we may all combine our efforts to make mothers and children healthier and happier and that there may always be peace between our nations and all the other nations of the world.

EDITH POTTER.

October 27, 1960

Children's Hospital of Infectious Diseases, Kiev

To Professor Bogdanov from the delegation of the U.S.A. National Institutes of Neurological Diseases on Maternal and Child Welfare. We have had a very informative and stimulating afternoon hearing of your splendid clinical and research work. We have been much impressed with the close association your institute maintains with those in allied fields in the United States—it is such close association of workers in our two countries that contribute to understanding, friendship, and peace. On behalf of the entire delegation,

STEWART H. CLIFFORD.

October 29, 1960

Makorov Village Hospital, Makorov Rayon, Kiev Oblast

The delegation of the U.S.A. on national and child welfare has this day made a visit to Makorov Rayon to see

first-hand now the health needs of 20,000 people are met. Of course we have concentrated on those aspects dealing with material and child health and we are impressed with the skill with which normal cases are handled and with the consultation or transfer system for complicated cases. It is understandable that the healthy young women and mothers of this rayon and the excellent prenatal and natal care should result in the excellent results that you have achieved.

We thank you for your cordiality—we only hope all of you can make return visits. The wisdom of both our Governments in promoting these exchanges should help to achieve all of our goals of freedom and peace.

STEWART H. CLIFFORD.

October 31, 1960

Kindergarten of the Lenin Arsenal Plant, Kiev

To Director Pyetrokovskaya and her staff, from the U.S.A. on maternal and child welfare. We have enjoyed visiting your beautiful and functional kindergarten. The children are obviously happy and well cared for. It is a great tribute to the interest of the U.S.S.R. in the welfare of children and in this we also find a common objective in our country for friendship and peace.

November 3, 1960

Institute of Pathology and Physiology of Women

We have had a wonderful time in the Institute of Pathology and Physiology. We are greatly impressed by the scientific activity of this young research center. We have had a pleasant opportunity to talk with colleagues about their work—all of our questions have been answered. It has been interesting, informative and stimulating.

Thank you very much and please come to our country and visit us.

STEWART H. CLIFFORD.
ALLAN BARNES.
EDITH POTTER,
KATHERINE BAIN.
FRED ROSEN.
BERNARD GREENBERG.

Appendix F

Moscow, November 10, 1960

Preliminary Report of the Delegation of Maternal and Child Care and Related Research to the U.S.S.R.

October 15–November 11, 1960

Pursuant to the Agreement between the United States of America and the Union of Soviet Socialist Republics for Cooperation in Exchanges in the Scientific, Technical, Educational, and Cultural Fields in 1960–61, signed in Moscow on November 21, 1959.

The Delegation on Maternal and Child Care and Related Research has traveled far in the Union of Soviet Socialist Republics and has visited many institutes, hospitals, and other points of medical care. We have met many scientists and doctors. We have asked innumerable questions.

Throughout this journey the delegation has been received in a friendly and courteous fashion. We are well aware of the fact that the arrival of a delegation such as ours disrupts the normal day-to-day work of any group or organization and occupies a considerable amount of time. Yet at all times we have been cordially greeted and our questions have been patiently answered—for this we are extremely grateful.

The results have been that we are now in possession of innumerable facts and figures. Areas of thought and methods of procedure that were unfamiliar to us a short time ago have been explained. We are beginning to see facets of medical care and education which were unfamiliar to us a few weeks ago.

Our minds are full of facts and opinions which are too numerous and too diversified for quick and easy assimulation. Like the guest at a Georgian banquet, we need time to digest what we have taken in. It is impossible for us—so soon after the feast of facts and figures—to give any final opinion or render any completed report. We can only, at the present moment, thank you most sincerely, promise you a copy of our ultimate report to the U.S. Government, and make a few preliminary observations.

Such observations are rendered only in an effort to help us achieve our common goal in the realm of maternal and child care, and to increase the understanding between scientists and medical workers in our two countries.

The importance placed on mother and child care in the Soviet Union has impressed us. When a nation invests as much of its medical time, effort, and budget in the realm of mother and child care, as does the Union of Soviet Socialist Republics, it interests us and elicits our attention. Furthermore, the tremendous studies which have been made in obstetrics and pediatrics medical care during the past 43 years arouses our admiration and we congratulate you on these achievements.

As you celebrate your national birthday and move on into your next 43 years, however, comparisons with the pre-Revolutionary situation will become less and less significant. Thus in the United States it has become without significance to compare the medical situation before our Revolution with the contemporary medical scene. The passage of time, the changes in socioeconomic conditions, and the general progress in medicine throughout the world will require a new standard of comparison.

Such a standard for international comparisons will require a common statistical language. The definitions and procedures recommended by the World Health Organization are perhaps not perfect, but they do have the advantage of offering our world such a common statistical language and can serve as a basis for comparing medical practices internationally.

On behalf of the other exchange medical delegations which will be authorized under the Thompson-Zhukov Agreement of November 21, 1959, between our Nations, we would like to urge—for both our countries—that more emphasis be placed on showing *procedures* rather than facilities. True understanding can be achieved only by observing medical activities in contrast to viewing equipment which is annually becoming more international.

We shall certainly suggest to our own Government an extension of translation services making more of your medical literature available to the scientists working in the United States. It is necessary that we should maintain close contact in our work and the Thompson-Zhukov Agreement, which has brought this delegation to the U.S.S.R., calls for facilitating "the publication of works on the most important problems of medical science" by the workers in both our countries. Surely the problem of maternal and child welfare should qualify as one of the most important problems.

The need for better communication is of great importance. We ourselves have profited by our opportunity to exchange views and opinions with our coworkers in the Soviet Union. Better communications would assure a continuation of this mutual exchange in the future.

Finally, we would like to call attention to the fact that the Zhukov-Thompson Agreement of November 21, 1959, calls for cooperative exchanges on a long-range basis

between your scientific research institutes and the corresponding governmental and nongovernmental organizations of the United States. The problems cited in this agreement are those of cancer, cardiovascular illnesses, and poliomyelitis but the phrase is added that it may be extended to "other important problems of medicine."

We intend to propose to our Government that the field of *maternal and child care and related research* is one such important problem and deserves a continuing association under the terms of this agreement. *For the U.S. side*, the National Institute of Neurological Diseases and Blindness and the Children's Bureau and through them other U.S. scientific institutions engaged in studying maternal and child care and related research, and *for the U.S.S.R. side*, perhaps the Division of Maternal and Child Care of the Ministry of Health and appropriate Institutes of the Academy of Medical Sciences and through them other Soviet scientific institutions engaged in studying this problem could be included in such an arrangement.

Maternal and child care and related research is too big an assignment and too broad a field for a single exchange delegation to grasp. Though this delegation has seen many types of care for mothers and children, we are well aware that we have not covered the broad range of services provided in the U.S.S.R. When our particular mission was under discussion in the United States, we realized that such a goal was impossible for one delegation. Therefore, the decision was made to put emphasis on specific areas and on a limited age group.

However, a continuing cooperative approach and further delegations extending our understanding would seem imperative. We anticipate receiving a related delegation of your workers. We would hope our Soviet colleagues, if they are of like mind, would make a similar recommendation for this extension of the Zhukov-Thompson Agreement.

It is difficult for us adequately to express our appreciation to all of you—and to our colleagues in Leningrad, Kiev, and Tbilisi. We are particularly appreciative of the high honor that was done this delegation in your appointing Dr. Lydia Grechishnikova to accompany us on our travels. At all times she has earned our respect and admiration.

The Surgeon General of the Department of Health, Education, and Welfare of the U.S.A. has requested that we convey his regards to Dr. Kurashov, Minister of Health; Dr. Blokhin, President of the Academy of Medical Sciences and to other Soviet colleagues.

Dr. Stewart H. Clifford, *Chairman.*
Dr. Allan C. Barnes.
Dr. Katherine Bain.
Dr. Bernard G. Greenberg.
Dr. Edith L. Potter.
Dr. Fred S. Rosen.

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